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A BIBLIOGRAPHY ON
COSTS, MARGINS AND EFFICIENCY
IN
MARKETING DAIRY PRODUCTS

Compiled by
A. F. Wolf

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U.S. Department of Agriculture
Economic Research Service
Marketing Economics Division

This bibliography contains selected annotated references to studies relating to costs, margins, efficiency and profits in marketing dairy products. It provides a guide to research on these aspects of the various processes involved in moving dairy products from the farm to the consumer.

Most studies listed were published within the last 15 years. Reports in which the data are duplicated or outdated by later reports are not included. A few studies published more than 15 years ago are included because they are considered noteworthy contributions to the study of costs of processing and distribution of dairy products.

The bibliography is arranged in sections on a functional and product basis. Within each group, entries are grouped alphabetically by author or by issuing agency where no author is given. The list includes publications of the U.S. Department of Agriculture, State agricultural experiment stations, other Federal or State agencies, trade associations, and other research organizations.

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ASSEMBLY AND HAULING

Agnew, Donald B.

HOW BULK ASSEMBLY CHANGES MILK MARKETING COSTS.

U.S. Dept. Agric., Mktg. Res. Rpt. 190. 91 pp. July 1957.

Analyzes comparative costs for cooling milk on farms in cans and bulk tanks, assembling milk farm-to-plant in cans and by tank trucks of various sizes, and receiving milk at bottling and processing plants. Examines comparative shrinkage and butterfat loss in handling and assembly for can and tank systems. Estimates extent and rate of shift to bulk-tank milk assembly and presents estimates of probable cost savings obtainable.

Aplin, R. D.

COUNTRY RELOAD PLANTS FOR BULK MILK: SPECIFICATIONS AND COSTS.

Cornell Univ. Agr. Expt. Sta. A.E. Res. 1. 39 pp. July 1958.

Principle objective of study to determine desirable features and costs of operating plants for transferring milk from farm pickup tankers to large over-the-road transports. Reload plants and their operations are described and costs of operations estimated.

Baum, E. L. and Pauls, D. E.

A COMPARATIVE ANALYSIS OF COSTS OF FARM COLLECTION OF MILK BY CAN AND TANK IN WESTERN WASHINGTON, 1952.

Wash. Agr. Expt. Sta. Tech. Bul. 10. 37 pp. May 1953.

Substitution of the farm tank container for the 10-gallon can is increasing in importance in western Washington, and this study offers assistance in determining whether the bulk handling of milk collected at the farm is more profitable. Analyzes 1952 costs of operating a 1,500-gallon tank truck versus those incurred with can pickup trucks, together with tank storage and refrigeration costs, can costs, wages, plant receiving room operation costs, etc.

Baum, E. L., Riley, R. D., and Weeks, E. E.

ECONOMIES OF SCALE IN THE OPERATION OF CAN AND TANK MILK RECEIVING ROOMS, WITH SPECIAL REFERENCE TO WESTERN WASHINGTON.

Wash. Agr. Expt. Sta. Tech. Bul. 12. 70 pp. May 1954.

Fixed and variable operating costs, as well as effects of plant volume and scale on operating costs, are analyzed for technically balanced model receiving rooms of various sizes, which receive Grade A milk in conventional 10-gallon cans and from farm tank pickup trucks. Data for 1953 furnish the basis for estimating costs.

Beal, G. M.

PROBLEMS ASSOCIATED WITH BULK HANDLING OF FLUID MILK.

1954 Milk Industry Foundation Conv. Proc., 47th Annual Meeting, Milk Supplies Sect., pp. 50-52. 1955.

Explores the effect of bulk handling on unit costs in widespread areas and the influence of refrigerated farm tanks on costs at the receiving station in terms of a 1953 investigation.

Bowring, J. R.

TANK-TRUCK ASSEMBLY OF MILK FOR NEW HAMPSHIRE.

N. H. Agr. Expt. Sta. Bul. 410. 24 pp. March 1954.

Examines possibilities for economies through adoption of tank handling and estimates effect on the New Hampshire dairy industry. Three appendices outline measurements and anticipated costs of various-sized tanks. Data cover the period 1951-53.

Bowring, J. R. and Taylor, Kenneth A.

TRANSITION TO THE BULK ASSEMBLY OF MILK IN NORTHERN NEW ENGLAND.

N. H. Agr. Expt. Sta. Bul. 453. 60 pp. Oct. 1958.

Discusses various phases of transition to bulk handling in three New England States. Information on reaction of producers, dealers, and processors. Special emphasis given to potential savings in transportation and assembly costs for which reason costs, rates, and necessary adjustments are analyzed. Analysis permits estimates of reduction of handling costs.

Bressler, R. G., Jr. and Hammerberg, D. O.

EFFICIENCY OF MILK MARKETING IN CONNECTICUT. 3. ECONOMICS OF THE ASSEMBLY OF MILK.

Univ. of Conn. Agr. Expt. Sta. Bul. 239. 53 pp. Feb. 1942.

Analysis of milk collection costs indicates that existing system is not only inefficient but is exacting excessive costs from producers. With efficient organization, payments for the assembly of milk could be reduced approximately one-third, or an increase in annual income of the producers of roughly \$250,000.

Carter, R. M., Brundage, K. P., and Bradfield, Alec.

LABOR AND EQUIPMENT USED IN MILK-RECEIVING PLANTS.

Vt. Agr. Expt. Sta. Bul. 563. 71 pp. Sept. 1951.

Operations were studied which are associated with receiving milk. Major emphasis was placed on the use of labor and on type and arrangement of equipment.

Case and Company

AN ANALYSIS OF COSTS OF OPERATING COUNTRY BULK RECEIVING STATIONS AND
A REPORT OF HAULING RATES FROM FARM TO RECEIVING STATION.

A report by Case and Company to the New Jersey Secretary of Agriculture,
NJDA Milk Study No. 2. 13 pp. July 1963.

Report on costs and cost differences in operating country bulk receiving stations and contract bulk handling rates between farm and receiving station.

Clarke, D. A., Jr.

A COMPARATIVE ANALYSIS OF THE COSTS OF OPERATING MILK COLLECTION ROUTES
BY CAN AND BY TANK IN CALIFORNIA.

Univ. of Calif. Giannini Foundation of Agr. Econ. No. 91. 46 pp. 1947.

Discusses generally the costs involved, comparative costs, trends to be expected, etc., in the developing use of farm storage tanks and transport tankers. Variations in cost arising from differences in input requirements are presented.

Clement, C. E.

COUNTRY MILK RECEIVING AND COOLING STATIONS.

U.S. Dept. of Agric. Circ. 432. 59 pp. June 1937.

Compares use of country stations with direct shipment; describes factors affecting the choice of location of a station; discusses quantities of milk handled, seasonal variations, time consumed in transporting milk to city markets, relation of volume handled to investment, and factors affecting operating costs.

COST OF OPERATING FARM MILK TRUCKS.

N. Y. State College of Agric., Dept. of Agr. Econ. and Farm Management.
16 pp. Aug. 1934.

Report issued to farmers on cost of operating trucks on New York farms. Report based on Cornell Expt. Sta. Buls. 427, 507, and 539, and a study by T. P. Lee. Reason for making it was NRA Truck Code.

Cotton, W. P.

MILK HAULING RATES AND PROBLEMS IN NORTH CAROLINA.

N. C. State Col., Dept. Agr. Econ. A.E. Info. Ser. 28. 62 pp. Dec. 1950.

Explains characteristics of milk collection routes and existing milk assembly conditions. A separate section appraises 1949 hauling rates and charges relative to returns, and estimates necessary charges per hundredweight to return truck operating costs.

Cowden, J. M.

FARM-TO-PLANT BULK AND CAN MILK HAULING COSTS.

U.S. Farmer Coop. Serv. Rpt. 18. 56 pp. March 1956.

Detailed analyses and comparisons of route operations for two midwestern cooperatives. Compares bulk and can hauling costs on the basis of actual and adjusted operations; explains factors effecting the comparative cost relationship. Analysis is based mainly on data obtained for June-November 1953.

Cowden, J. M.

COMPARING BULK AND CAN MILK HAULING COSTS.

U.S. Farmer Coop. Serv. Circ. 14. 13 pp. June 1956.

Reports results of cost comparisons between can and bulk milk hauling operations of two midwestern cooperatives. Also, estimates significance to producers of potential cuts in hauling costs.

EFFECTS OF SEASONAL MILK PRODUCTION ON MARKETING COSTS.

Univ. of Illinois, Dept. Agr. Econ. 12 pp. Feb. 1936.

A study of the effects of seasonal milk production on marketing costs in the New York, Philadelphia and St. Louis milksheds.

French, Charles E., Strain, James R., and Braschler, Curtis H.

MARKET PLANNING FOR FARM BULK ASSEMBLY OF MILK.

Purdue Agr. Expt. Sta. Res. Bul. 747. Aug. 1962.

Analysis of bulk milk handling in the Evansville, Indiana, market to provide information to producers, haulers, and processors about economic feasibility of shifting from can to bulk handling.

Graf, Truman F. and Miller, Robert H.

TRUCK WEIGHT REGULATIONS IN WISCONSIN AND THEIR EFFECT ON THE DAIRY INDUSTRY.

Univ. of Wisc. Agr. Econ. Rpt. 32. 28 pp. June 1961.

Study analyzes truck weight regulation in Wisconsin because these regulations affect costs of marketing which total about 10 percent of all dairy marketing costs.

Groves, Francis W. and Cook, Hugh L.

HAULING AND TRANSPORTATION COST FUNCTIONS FOR WISCONSIN MILK.

Univ. of Wis. Agr. Econ. Rpt. 31. April 1961.

Report brings together data on costs of hauling milk from farm to plant and data on cost of interplant transportation. Hauling cost data compare can with bulk handling.

Hammerberg, D. O. and Sullivan, W. G.

EFFICIENCY OF MILK MARKETING IN CONNECTICUT. 2. TRANSPORTATION OF MILK.

Univ. of Conn. Agr. Expt. Sta. Bul. 238. 29 pp. Feb. 1942.

Conclusions from this study are: (a) Organization of milk transportation involves many inefficiencies, (b) changes made for the transportation service do not reflect the costs of performing the services, (c) monopoly situations frequently stem from the sale of the milk. Conclusions are not independent but are three interrelated aspects of the lack of competitive conditions.

Hand, P. E. and Pierce, C. W.

RECEIVING AND TRANSPORTATION COSTS FOR MILK IN THE PHILADELPHIA MARKET, 1954-55.

Pa. Agr. Expt. Sta., Dept. Agr. Econ. and Rur. Soc. A.E. & R.S. 6.

21 pp. Aug. 1956.

The relationship between transportation rates and distance is shown, and a table showing the comparison of actual transportation costs with 1956 rates is given. The object was to determine the fair Federal allowance for handling milk through country receiving stations and shipped to city plants.

Henderson, A. S. and Cowan, -R.

BULK HAULING, ITS COST PROBLEMS--ITS SAVINGS.

Milk Plant Monthly 45(5): 18-19, 41-42. May 1956.

Evaluates the pros and cons of bulk hauling; each author takes a separate viewpoint. Describes hundredweight charges and premium payments to producers, as well as the financing of tanks in 1955.

Ishee, S.

THE IMPACT OF BULK HANDLING ON THE MARKET MILK INDUSTRY.

Northeastern Dairy Conf. Annual Rpt. 21:20-28. 1956.

Considers the bulk handling effect on costs and returns to producers, haulers, and handlers operating in Pennsylvania in 1954. Four tables give details on cost comparisons between can and bulk usage.

Ishee, S. and Barr, W. L.

ECONOMICS OF BULK MILK HANDLING.

Pa. Agr. Expt. Sta. Bul. 631. 33 pp. March 1958.

Added costs resulting from changing from customary can to bulk handling of milk were greater than added returns. Net cost increases per hundredweight of milk ranged from 0 to 25 cents and slightly more. However, adopting the bulk tank system resulted in smaller reduction of net income than going out of the dairy business.

Ishee, S. and Barr, W. L.

EFFECTS OF BULK MILK ASSEMBLY ON HAULING COSTS, FARM TO PLANT.

Pa. Agr. Expt. Sta. Bul. 641. 21 pp. Dec. 1958.

Data were collected for daily can pickup, daily tank pickup, and alternate-day tank pickup. For similar volumes of milk, alternate-day tank collection costs for truck operation and labor were less, but required the same total fixed investment in equipment as daily tank collection. Costs were not greatly different on routes with small shipments per producer, on routes with large numbers of shippers, or on routes with considerable distance between shippers.

Johnson, Stewart and Henry, W. F.

FORMULAS FOR ADJUSTING MILK TRANSPORTATION RATES.

Univ. of Conn. Agr. Expt. Sta. Bul. 274. 34 pp. March 1951.

Provides a basis for adjusting hauling rates after an initial schedule, with appropriate differences among producers, is decided upon. Sections are devoted to the relative importance of various cost items in hauling milk, the effect of volume of milk deliveries on hauling costs, and hauling rates resulting from use of a suggested formula. Tables are based on data accumulated chiefly for 1946-50.

Johnson, Stewart and Brinegar, George K.

ECONOMIC ANALYSIS OF THE MILK-HAULING-RATE STRUCTURE FOR MEMBERS OF A PRODUCERS' COOPERATIVE.

Univ. of Conn. Agr. Expt. Sta. Bul. 353. 20 pp. June 1960.

Study analyzes problem of hauling charges consistent with efficiency of a single cooperative in the Connecticut market. Efficiency considerations include the ease of shifting producers among market outlets as well as costs of hauling milk to given dealers. Only reasonable equity is objective.

Kelley, P. L.

ROUTE ORGANIZATION AND BULK MILK ASSEMBLY COSTS IN THE WICHITA MARKET.

Kansas St. Col. Agr. Econ. Rpt. 82. 22 pp. July 1958.

Provides detailed description of the structure of the assembly process, estimates cost variations among existing bulk routes, relates these costs to the hauling rate structure existing in the market, and suggests possible methods of reducing assembly costs in the market.

Tables show miles of travel, pounds of milk hauled, number of producers, travel time requirements, truck and tank costs, labor costs per mile and per 100 pounds, and average hauling rates.

Kelly, P. L.

COST FUNCTIONS FOR BULK MILK ASSEMBLY IN THE WICHITA MARKET.

Kansas Agr. Expt. Sta. Tech. Bul. 96. 32 pp. May 1958.

Purpose was to develop functions for estimating bulk assembly costs of milk in the Wichita market using a given technology. Analysis provided benchmark data for use in appraising alternative handling arrangements.

Kutish, J. and Miller, A.

TRUCK TRANSPORTATION IN THE MARKETING OF WISCONSIN MILK AND FLUID DAIRY PRODUCTS.

Wis. Agr. Ext. Serv. Econ. Infor. Wis. Farmers 21(4-6): 1-6. April-June 1950.

Reviews hauling costs from farms to plants, between plants in the State, and from Wisconsin plants to out-of-State markets in 1949. Assesses the effect of size of payload on these costs.

McKinney, Kenneth and Stelly, Randall

FARM-TO-PLANT HAULING AND RECEIVING BULK MILK.

Texas Agr. Expt. Sta. MP-377. 11 pp. Oct. 1959.

Provides information to milk haulers, plant managers, dairymen, etc., concerning the differences in assembly and receiving milk in bulk and cans, especially differences in costs of investments, density of routes, hauling rates, methods of measuring milk, etc.

Miller, A. H.

BULK HANDLING OF WISCONSIN MILK--FARM TO PLANT.

Wis. Agr. Expt. Sta. Res. Bul. 192. 72 pp. Feb. 1956.

Compares costs facing the dairy industry in adoption of bulk handling, with costs expected under can operation. Discusses costs of equipment, labor, receiving and hauling, and includes tables based on these costs in Wisconsin during 1954.

Moore, Donald S., Stelly, Randall and Parker, Cecil A.

COSTS, SAVINGS AND FINANCING BULK TANKS ON TEXAS DAIRY FARMS.

Texas Agr. Expt. Sta. Bul. 904. 11 pp. May 1958.

Information is intended to help dairy farmers determine whether a bulk tank will be profitable. Bulletin also presents data to help dairy farmers and leading agencies in financing bulk tanks. Data on costs, savings and financing were obtained by interviews with 227 tank owners in various parts of Texas.

Pierce, C. W. and Shafer, Carl

COST STUDIES OF RECEIVING AND TRANSPORTING MARKET MILK IN THE PHILADELPHIA AREA--FARM-TO-PLANT HAULING CHARGES FOR DIRECT-SHIPED MILK, JUNE 1958.

Pa. State Univ. Dept. Agr. Econ. and Rural Soc. Bul. No. 24. 14 pp.
Jan. 1960.

Objective of study to determine whether processing plants within the 0-45 mile zone act as interceptors which receive milk from producers and then relay the milk to the ultimate market. Comparisons of hauling rates and distances show an inverse relationship between the magnitude of the rates and the distance. Factors other than distance were found to be responsible for some part of the variations in hauling rates.

Pritchard, N. T. and Cope, W. H.

MILK ASSEMBLY IN THE FORT WAYNE MILKSHED.

Purdue Agr. Expt. Sta. Bul. 559. 24 pp. Feb. 1951.

Treats milk assembly costs in the Fort Wayne milkshed in the fall of 1949; determines the chief factors affecting haulers' returns; develops a system of hauling rates reflecting costs of service; and recommends changes in hauling practices likely to lower hauling costs.

Saufley, Zack C.

AN APPRAISAL OF BULK TANK HANDLING.

Univ. of Kentucky, M.S. thesis. 1957.

Scanlan, John J.

SURVEY OF THREE MARYLAND COOPERATIVE MILK TRUCKING ASSOCIATIONS.

U.S. Farm Credit Admin. Misc. Rpt. 2. Jan. 1935.

This is an investigation of the operations of three cooperative milk haulers for purpose of making experience available to others.

Sinclair, R. O.

ECONOMIC EFFECT OF BULK MILK HANDLING IN VERMONT.

Vt. Agr. Expt. Sta. Bul. 581. 35 pp. June 1955.

Studies 18 farms which had converted to bulk tanks and analyzes the results as to the advantages and disadvantages of the change. Discusses and summarizes tank costs and operating costs in terms of 1953 prices.

Sonley, L. T.

COST OF TRANSPORTING MILK AND CREAM TO BOSTON.

Vt. Agr. Expt. Sta. Bul. 462. 56 pp. July 1940.

Outlines the development of transportation facilities and tariff structures in the Boston milk and cream sheds, describes the present rates and methods of shipment, determines the approximate cost of the services and operations associated with transport which are included under rates only in certain cases, compares alternative methods as to

total cost. Pages 3-5 deal with transportation as an element in marketing costs; table 1 with the relation of transportation rates to fluid milk and cream prices in 2 zones, August through December 1939.

Spencer, Leland

AN ECONOMIC STUDY OF THE COLLECTION OF MILK AT COUNTRY PLANTS IN NEW YORK.

Cornell Agr. Expt. Sta. Bul. 486. 47 pp. 1929.

Deals with the costs of hauling milk from farm to country milk plants.

Stelly, Randall, Moore, Donald S., and Parker, Cecil A.

BULK HANDLING OF MILK ON TEXAS DAIRY FARMS.

Texas Agr. Expt. Sta. Bul. 894. March 1958.

Summarizes information obtained in the North Texas and Corpus Christi areas during the spring and summer of 1957 on dairy farms which converted their operations to the bulk system of producing and handling milk.

Stocker, N.

PROGRESS IN FARM-TO-PLANT BULK MILK HANDLING.

U.S. Farmer Coop. Serv. Circ. 8. 53 pp. Nov. 1954.

Outlines results of a survey undertaken in the summer of 1953. Measures and describes the extent, location, and variable patterns of industry progress and trends in adopting the bulk handling system in all States except California and Florida. One section of the study deals with hauling rates and differentials on can versus bulk hauling, and tabulates the estimated savings on bulk hauling for various parts of the country.

Thom, E.

TANK TRUCK PICK-UP OF FARM TANK BULK MILK.

The Milk Dealer 41(4): 38-39, 100-107. Jan. 1952.

Deals primarily with the engineering phase, but also gives cost figures for hauling in various cities, and relationship between charges for bulk tank hauling and can hauling. Charges shown are for 1951.

Thompson, Russell G. and Koller, E. Fred

INTERPLANT MILK TRANSPORTATION COSTS.

Minn. Agr. Expt. Sta. Stat. Bul. 465. 24 pp. June 1963.

Estimates the relationships between interplant milk transportation costs and factors influencing these costs. Eight cost factors were studied.

Timms, Daniel E., Evans, T. A., and Sluyter, Ronald
ECONOMIC AND LEGAL PROBLEMS OF BULK MILK HAULING IN NEBRASKA.
Neb. Agr. Expt. Sta. Agr. Econ. Rpt. 31. 41 pp. Nov. 1963.

Discusses movement of bulk milk from producer to plant in Nebraska in terms of duties and working conditions of haulers, investment and financing, element of competition in rate setting, etc.

Tucker, C. K.
COMPARATIVE COSTS OF OPERATING COUNTRY MILK PLANTS SHIPPING RAW MILK, PASTEURIZED MILK, AND BOTTLED MILK, 1925.
Cornell Univ., Farm Economics No. 50, pp. 854-856. Jan. 1928

Presentation of comparative costs of operating raw milk, pasteurizing and bottling plants, likewise costs of supplies used and costs of generating steam in these plants for the year 1925.

Tucker, C. K.
THE COST OF HANDLING FLUID MILK AND CREAM IN COUNTRY PLANTS.
Cornell Univ. Agr. Expt. Sta. Bul. 473. 119 pp. Jan. 1929.

Purpose of study to determine costs of handling fluid milk and cream in country plants and effects of various factors upon efficiency of operations.

Varney, H. R.
TRANSPORTATION OF MILK AND CREAM TO THE NEW YORK MARKET.
Cornell Univ. Agr. Expt. Sta. Bul. 655. 79 pp. 1936.

Discusses and compares the costs of transportation of milk by different methods. For distances greater than 200 miles, railroads appear to offer more economical transportation than motor trucks.

Waananen, M. V. and Wyckoff, J. B.
SUGGESTED METHODS OF ESTABLISHING FARM BULK MILK HAULING RATES.
Wash. Agr. Expt. Sta. Bul. 603. 21 pp. April 1959.

The elements that constitute average daily hauling costs are itemized, three methods of distributing the cost among individual shippers and three methods of calculating rates are explained and illustrated.

Waananen, M. V. and Bartlett, R. W.
IMPACT OF BULK HANDLING OF MILK.
Wash. Agr. Expt. Sta. Bul. 607. 35 pp. Oct. 1959.

Analysis of impact of bulk tank handling of milk from farmer to processor. Analysis indicates that bulk tanks will have far reaching effects on the dairy industry, through expansion of milk supply areas, growth of specialization and lower transportation costs.

Welden, W. C.

THE SMALL PRODUCER AND BULK.

Milk Plant Monthly 46(3): 18-20, 22. March 1957.

Appraises New England experiences with bulk milk handling and debates charge that the bulk tank works an undue hardship or penalty on small producers. Estimates tank costs, hauling premiums, increased income, and minimum cost of the bulk operation.

Wilcox, E. C.

TRANSPORTATION OF WISCONSIN MILK--FARM TO MARKET.

Wis. State Dept. Agric. Bul. 308. 74 pp. July-Aug. 1951.

Supplies information on the movement of milk over Wisconsin highways. Surveys cover the following three groups: (1) A representative group of farmers throughout the State, (2) all dairy plants in the State receiving whole milk from farmers, and (3) contract haulers who were named in the dairy plant schedules. Discusses in detail hauling charges and costs for 1950.

PROCESSING AND DISTRIBUTION

Allred, W. M. and Ward, E. H.

COSTS, QUALITY, AND PRICES OF FLUID MILK IN RURAL AND URBAN AREAS OF UTAH AND MONTANA.

Utah Agr. Expt. Sta. Bul. 365. 40 pp. Dec. 1953.

Analyzes operating costs in 1950 for 33 fluid milk processing plants in Utah and 9 in Montana. Discloses reasons for low unit operating costs. Describes the pricing pattern for fluid milk products in Utah and analyzes the quality of fluid milk supplied Utah communities.

Angus, R. C. and Brandow, G. E.

CHANGES OF PRODUCTIVITY IN MILK DISTRIBUTION IN TWO PENNSYLVANIA MARKETS, 1940-57.

Pa. Agr. Expt. Sta. Prog. Rpt. 221. 14 pp. June 1960.

Determines changes in labor and capital productivity during the 17-year period, using milk receipts from producers as measure of changes in output. The markets studied were Philadelphia and Pittsburgh.

Aplin, R. D.

OPERATING ON SMALLER MARGINS.

Cornell Univ., Dept. Agr. Econ. Paper presented at Dairy Manufacturing Day, Univ. Conn. March 1961.

Discusses possibilities of reduction of operating cost of (1) fluid milk processing operations and (2) fluid milk distribution.

Armentrout, W. W. and Stelzer, R. O.

MILK DISTRIBUTION COSTS IN WEST VIRGINIA. II. A STUDY OF THE COSTS INCURRED BY 75 PRODUCER-DISTRIBUTORS IN THE CLARKSBURG, FAIRMONT, AND WHEELING MARKETS FOR A 12-MONTH PERIOD DURING 1934-35.

W. Va. Agr. Expt. Sta. Bul. 270. 32 pp. June 1936.

Results of the study show that the average cost of distributing milk was \$1.76 per 100 pounds of milk-equivalent sold, and that the distribution cost of producer-distributors was lower than that of milk distributing plants.

Babb, E. M. and Butz, W. T.

IMPROVING FLUID MILK DISTRIBUTION PRACTICES THROUGH ECONOMIC-ENGINEERING TECHNIQUES.

Pa. Agr. Expt. Sta. Bul. 622. 40 pp. June 1957.

Establishes techniques for small dealers' use in evaluating their milk distribution system, through a time study, profit-volume analysis, and the budgetary method of analysis. Data are for a week in the summer of 1955 and the summer of 1956.

Barry, Goodloe, Reinbold, T. D., and Enger, M. R.

EVALUATION OF NEW CONTAINERS FOR SCHOOL MILK.

U.S. Dept. Agric. Mktg. Res. Rpt. 407. 46 pp. June 1960.

Evaluates two milk containers recently introduced in American schools: Tetrahedral paper container and the 5-gallon dispenser can. Both tetra containers and dispenser cans reduced the costs of packaging milk. There was little to choose between the tetra and the conventional $\frac{1}{2}$ -pint containers in the serving operation; serving milk from cans required substantially more labor and equipment.

Bartlett, R. W. and Gothard, F. T.

MEASURING EFFICIENCY OF MILK PLANT OPERATION.

Ill. Agr. Expt. Sta. Bul. 560. 56 pp. Nov. 1952.

Studies operation of two efficiently-run plants in Illinois and Minneapolis, with data for 1946 which can be used as a standard of comparison for other plants. Discusses costs of labor, space, equipment, and utilities. The appendix itemizes breakdowns of the cost data in 60 tables.

Baum, E. L.

ECONOMIC ANALYSIS OF THE QUAD CITIES (IOWA-ILLINOIS) MILK MARKET.

Ph. D. thesis, Iowa State College. 1949.

Study of milk distribution operations, including margins. Sixty percent wholesale.

Baum, E. L.

ANALYSIS OF CLASS I UTILIZATION AND OPERATING SPREADS, SIX LEADING MILK DISTRIBUTORS, SEATTLE MILK MARKET, 1949-50.

Wash. Agr. Expt. Sta. Circ. 125. 9 pp. Dec. 1950.

Analyzes Class I operations of six leading handlers. Includes Class I analysis and seasonality of sales, and determination of the Class I operating spreads by months from July 1949 to June 1950.

Baum, E. L., Riley, R. D., and Weeks, E. E.

ECONOMIES OF SCALE IN THE OPERATION OF CAN AND TANK MILK RECEIVING ROOMS, WITH SPECIAL REFERENCE TO WESTERN WASHINGTON.

Wash. Agr. Expt. Sta. Tech. Bul. 12. 70 pp. May 1954.

Fixed and variable operating costs, as well as effects of plant volume and scale on operating costs, are analyzed for technically balanced model and receiving rooms of various sizes, which receive Grade A milk in conventional 10-gallon cans and from farm tank pick-up trucks. Data for 1953 furnish the basis for estimating costs.

Berry, Calvin R. and Meenen, H. J.
DISTRIBUTING DAIRY PRODUCTS THROUGH RETAIL STORES IN ARKANSAS.
Ark. Agr. Expt. Sta. Bul. 592. 36 pp. June 1957.

Study analyzes sales of dairy products through retail stores, determines gross handling margins which are related to differences in techniques, size of store, overall store efficiency, etc. Purpose is to discover factors that may serve as guides to increase the efficiency of marketing dairy products through retail stores.

Blake, Helen T. and Friend, Lloyd F.
MILK DATING REGULATIONS--THEIR EFFECT ON MILK DISTRIBUTION AND MERCHANDISING PRACTICES.

U.S. Dept. Agric. Mktg. Res. Rpt. 415. 36 pp. Revised March 1961.

Study of the extent and nature of dating requirements for fluid milk and their economic consequences in 34 areas having some type of dating regulation in 1957, compared with a number of areas without dating regulations.

Blanchard, W. H., McBride, Glynn, and Rippen, A. L.
A COST ANALYSIS OF FLUID MILK PACKAGING OPERATIONS.

Mich. Agr. Expt. Sta. Tech. Bul. 285. 43 pp. March 1962.

Packaging costs and factors particularly significant in influencing such costs. Data obtained from 12 fluid milk plants in 1958.

Blanford, C. J.
FACTORS AFFECTING SIZE OF LOADS ON RETAIL MILK DELIVERY ROUTES IN NEW YORK CITY.

N. Y. Agr. College, Farm Economics 101: 2484-2486. May 1937.

Material from a study of costs of selling and delivering milk in New York City, based on data collected in 1933 under the supervision of Dr. Leland Spencer for the Division of Milk Control, New York Department of Agriculture and Markets. The amount of milk and other products taken per customer, the number of customers per mile of route, and the number of flights of stairs climbed in serving a given number of customers are among the subjects studied.

Blanford, C. J.
AN ECONOMIC STUDY OF THE COSTS OF SELLING AND DELIVERING MILK IN THE NEW YORK MARKET.

Cornell Univ. Agr. Expt. Sta. Bul. 686. 60 pp. 1938.

The expense of selling and delivering milk in New York City amounts to more than half the total cost of distribution. Several possible ways for decreasing the cost per unit for retail deliveries are suggested, including discontinuance of doorstep delivery in certain sections of the city where most milk is distributed through stores, use of helpers on routes in large sales areas, and restriction of the number of dealers delivering milk in each section of the city.

Blank, M. H.

ARE GALLONS AND HALF-GALLONS PROFITABLE?

Milk Industry Foundation, 1952 Conv. Proc., pp. 39-51. Sept. 24-26, 1952.

Considers the differential on half-gallon and gallon containers, as compared with single quart equivalents. Analyzes processing operations of companies in southern California, metropolitan New York and New Jersey, and one midwestern plant.

Bowen, John T.

THE COST OF PASTEURIZING MILK AND CREAM.

U.S. Dept. Agric. Bul. 85. April 1914.

Attempt to show the additional expense encountered in producing pasteurized milk and cream over the raw product. Average cost of pasteurizing 1 gallon of milk was \$0.00313, that of cream 0.00634.

Bowring, James R. and Chadbourn, Aaron, W., Jr.

COSTS AND RETURNS FOR MILK PROCESSING AND DISTRIBUTION IN NEW HAMPSHIRE, 1957.

N. H. Agr. Expt. Sta. Agr. Econ. Res. Mimeo. 19. 16 pp. Jan. 1958.

Purpose of study to provide the New Hampshire Milk Control Board with basic data to help in evaluation of level of prices at which milk is currently being sold, and of the price differential enjoyed by the wholesale trade.

Bowring, James R., Moore, Herbert C. and Chadbourn, A. W., Jr.

REDUCING COSTS OF PROCESSING MILK BY CONSOLIDATING OPERATIONS.

N. H. Agr. Expt. Sta. Agr. Econ. Res. Mimeo. 25. 21 pp. Nov. 1959.

Consolidation of operations for the purpose of obtaining economies of scale by reducing overhead, supplies and labor per unit of milk.

Bressler, R. J., Jr., Clarke, D. A., Jr., and Seaver, S. K.

EFFICIENCY OF MILK MARKETING IN CONNECTICUT. 9. CONSERVATION POSSIBILITIES IN RETAIL DELIVERY IN MAJOR MARKETS.

Storrs (Conn.) Agr. Expt. Sta. Bul. 23. 46 pp. Aug. 1944.

Study presents results obtained for Hartford and New Haven. Mileage traveled in Hartford was 5,000 before the war, an area with only 184 miles of city streets. Alternate-day delivery reduced truck travel to 3,000 miles per day is still excessive. Best distribution would be from a single centrally located plant (public utility).

Bressler, R. J., Jr.

EFFICIENCY OF MILK MARKETING IN CONNECTICUT. 10. CONSUMER DEMANDS AND PREFERENCES IN MILK DELIVERY.

Storrs (Conn.) Agr. Expt. Sta. Bul. 257. 51 pp. April 1948.

Determines reaction to alternate-day delivery, exclusive delivery territories, one plant for each market and elimination of home delivery routes. Data were obtained by questioning householders in Willimantic and Hartford. Also, analyzes potential savings from milk delivery reorganizations and compares differences in costs before and after reorganization.

Brown, C. A.

COSTS AND MARGINS AND OTHER RELATED FACTORS IN THE DISTRIBUTION OF FLUID MILK IN FOUR ILLINOIS MARKET AREAS.

Ill. Agr. Expt. Sta. Bul. 318. pp. 171-282. Dec. 1928. (Rev. April 1929)

Deals with milk production, marketing agencies and contributory organizations, assembling and processing plants, statistics on consumption, surplus milk, costs and margins in milk distribution, and factors affecting dealers' margins.

Brown, E. E.

SELLING MILK BY AUTOMATIC VENDING MACHINES.

S. C. Agr. Expt. Sta. Bul. 435. 44 pp. June 1956.

The economic feasibility of selling milk through vending machines in the South. Devotes a section to operating cost budgets and another to the effect of major costs upon returns. Twenty-three machines were placed in a variety of locations in South Carolina in 1955, and the results of the frequency of use are studied.

Buckingham, S. M.

DEALERS' SPREAD IN CONNECTICUT.

In Brown, E. F. Milk Papers 5(86): 1-9. Jan.-May 1939.

"From the Report of Proceedings, 57th Annual Convention, Conn. Dairy-men's Association, Jan. 1939."

Based on a survey made by S. W. Tator and H. P. Snow. In this study of profit and loss statements from 47 merchant dealers, 25 dealers showed profits and 22 losses. Includes a table in which the data submitted by the dealers are summarized.

Cance, Alexander C. and Ferguson, Richard H.

THE COST OF DISTRIBUTING MILK IN SIX CITIES AND TOWNS OF MASSACHUSETTS.

Mass. Agr. Expt. Sta. Bul. 173. Coop. with U.S. Office of Markets. 54 pp. May 1917.

The cost of distribution retail milk by more than 80 distributors was 2.64 cents a quart in 1914 and 1915. It cost 42 distributors in Worcester and Springfield 2.79 cents a quart on the average. Costs include all labor costs, all depreciation, all maintenance and overhead costs.

Carley, D. H.

TRANSPORTING PACKAGED FLUID MILK TO DISTANT MARKETS. COST AND SYSTEMS IN GEORGIA.

Ga. Expt. Sta. and USDA, ERS, Tech. Bul. N.S. 30. 38 pp. Nov. 1963.

Cost coefficients for transporting milk helpful to the dairy industry in Southern States.

Carncross, John W.

COST OF OPERATING 782 OUTDOOR MILK VENDING MACHINES IN NEW JERSEY.

N. J. Agr. Expt. Sta. A. E. 244. 8 pp. July 1959.

A sample of 59 machine owners was interviewed for data on costs and volume of sales. Total average costs were \$971 per machine per year. Largest single item of expense was \$269 for rental space, then depreciation, \$145. Sales per machine averaged 11,211 quarts per year, total expense per quart \$.087. Principal problems were vandalism and difficulties with the coin mechanism.

Case and Company

AN ANALYSIS OF THE COSTS CREATED IN PROCESSING, DISTRIBUTING, AND SELLING MILK THROUGH STORES IN NEW JERSEY.

Submitted to Secretary of Agriculture of the State of New Jersey.

46 pp. May 1963.

Study confined to costs of processing, distributing and selling milk through stores in New Jersey. Analysis starts at point where raw milk enters the processing and bottling plant.

Case and Company

AN ANALYSIS OF COSTS OF OPERATING COUNTRY BULK RECEIVING STATIONS AND A REPORT OF HAULING RATES FROM FARM TO RECEIVING STATION.

Submitted to Secretary of Agriculture of the State of New Jersey.

13 pp. July 1963.

Report on (a) costs and cost differences in operating bulk receiving stations, and (b) contract bulk hauling rates between farm and receiving station.

Case and Company

COST REDUCTIONS FROM ELIMINATION OF MILK DATING.

Estimates submitted to Secretary of Agriculture of the State of New Jersey. 10 pp. July 1963.

Estimates of cost reductions that could result in the flow of "whole-sale" milk from the elimination of "dating" regulations.

Case and Company

ANALYSIS OF THE COSTS CREATED IN PROCESSING AND LOADING ONTO TRUCKS MILK THAT IS PACKAGED IN GLASS CONTAINERS IN NEW JERSEY.

Submitted to Secretary of Agriculture of State of New Jersey.

13 pp. Oct. 1963.

Report presents results of assignment, i.e., to determine costs of processing milk in glass containers and of loading it onto distribution trucks.

Case and Company

NJDA MILK STUDY SUPPLEMENTS NO. 1, NO. 2, AND NO. 3.

Submitted to Secretary of Agriculture of State of New Jersey on

Dec. 6, 12, and 13, 1963. 8 pp.

Provides information which supplements the NJDA Milk Studies. Information became available through questionnaires mailed to licensees during the cost analysis of milk.

Case and Company

MISCELLANEOUS ADDENDA SUPPLEMENTING NJDA MILK STUDIES.

Submitted to Secretary of Agriculture of State of New Jersey.

12 pp. Feb. 1964.

Reprints from original documents submitted by the study contractor to the Secretary of Agriculture, mostly on costs in stores handling milk.

Caskey, Wayne

EFFECTS OF SEASONAL MILK PRODUCTION ON MARKETING COSTS.

Univ. Ill. 12 pp. Feb. 1936.

A study of the effects of seasonal milk production on marketing costs in the New York, Philadelphia and St. Louis milksheds.

Clarke, D. A., Jr.

COST AND PRICING PROBLEMS IN WHOLESALE MILK DELIVERY IN THE LOS ANGELES MARKET.

Univ. Calif. Giannini Foundation of Agr. Econ. 29 pp. Feb. 1951.

Discusses flat pricing and also the relationship of delivery costs to volume, with pricing reflecting the nature of delivery costs in 1950. Tables summarize delivery cost data for the Los Angeles market.

Clarke, D. A., Jr.

MILK DELIVERY COSTS AND VOLUME-PRICING PROCEDURES IN CALIFORNIA.

Calif. Agr. Expt. Sta. Bul. 757. 77 pp. Dec. 1956.

Covers development of milk distribution in California markets and analyzes the flat pricing plan and its impact on efficiency of retail and wholesale operations.

Clarke, James H., Myers, Mardy and Hunter, J. Scott
MILK VENDING--A MARKET-WIDE EVALUATION IN BERKELEY COUNTY, WEST VIRGINIA.
W. Va. Agr. Expt. Sta. Bul. 429. 58 pp. June 1959.

Study was made to measure the effect of sales through vending machines on total sales of milk in all the channels of a market. In order to observe seasonal and innovational effects, study was conducted over a relatively long period of time.

Clarke, James H. and Thompson, Walter F.
MERCHANDISING MILK THROUGH VENDING MACHINES.
W. Va. Agr. Expt. Sta. Bul. 430. 49 pp. June 1959.

This study brings together in a condensed and consolidated presentation the important features of machine milk vending as reported in the more recently published studies and articles on the subject.

Clement, Clarence E. and Warber, Gustav P.
THE MARKET MILK BUSINESS OF DETROIT, MICHIGAN, IN 1915.
U.S. Dept. Agric. Bul. 639. 28 pp. Feb. 1918.

General analysis of the market milk business as conducted in Detroit, Michigan, in 1915. It indicates some of the fundamental explanations of existing market conditions and milk marketing practices in larger cities. Some cost analyses are presented.

Cobia, D. W. and Babb, E. M.
AN APPLICATION OF EQUILIBRIUM SIZE OF PLANT ANALYSIS OF FLUID MILK PROCESSING AND DISTRIBUTION
Journal of Farm Economics, Vol. 46, No. 1. pp. 109-116. Feb. 1964.

Results of an empirical study in which a model for equilibrium size of marketing firm in a spatial market is used. Model is applied to the processing and distribution of packaged fluid milk. Solution of the model results in determination of size of plant associated with minimized average processing and distribution costs.

Cobia, D. W. and Babb, E. M.
DETERMINING THE OPTIMUM SIZE FLUID MILK PROCESSING PLANT AND SALES AREA.
Purdue Agr. Expt. Sta. Res. Bul. 778. May 1964.

Inquiry into the economic factors that limit the size of the distribution area of a packaged fluid milk processing plant, of special interest was the use of refrigerated semitrailers to distribute packaged milk beyond local markets.

Conner, Maynard C., Spencer, Leland, and Pierce, C. W.
SPECIFICATIONS AND COSTS FOR A MILK PASTEURIZING AND BOTTLING PLANT
Northeast Reg. Publ. 16, Va. Agr. Expt. Sta. Bul. 463. 48 pp.
June 1953.

A model fluid milk processing plant with detailed design and cost specifications, developed in consultation with a firm of management engineers, dairy manufacturing specialists, and equipment companies. Modifications in the original model plant to test the effect on costs of reduced volume of output, handling of surplus milk, purchases of some byproducts, and combined glass-paper operations.

Conner, Maynard C., Webster, Fred C., and Owens, T. R.
AN ECONOMIC ANALYSIS OF MODEL PLANTS FOR PASTEURIZING AND BOTTLING MILK
Va. Agr. Expt. Sta. Bul. 484. 72 pp. June 1957.

Budgetary analysis of costs involved in processing only, with particular application to pasteurizing and bottling plants.

Conner, Maynard C. and Giles, E. J.
MILK DELIVERY PRACTICES--ALTERNATIVES AND COSTS
Va. Agr. Expt. Sta. Bul. 515. 59 pp. July 1950.

A budgetary analysis of synthesized routes based on data and measurements from actual retail routes for 21 days and wholesale routes for 17 days during August of 1948 in Danville and Lynchburg, Virginia.

Cook, H. L.
A BUSINESS ANALYSIS OF MILK VENDING OPERATIONS
Wis. Agr. Expt. Sta. Res. Bul. 174. 24 pp. March 1951.

Deals with the package-type vender. Surveys Wisconsin vender operators, and discusses the locations of their milk vending machines. Tabulates and explains an operating cost budget, as of 1950.

Cook, H. L.
PAPER PACKAGED MILK IN WISCONSIN.
Wis. Agr. Expt. Sta. Res. Bul. 179. 40 pp. June 1953.

Explores the use of paper in milk packaging and its part in expanding distribution areas. Investigates cost factors together with distribution savings realized in converting from a dual operation to straight paper. Most of the data given are for 1952.

Cook, H. L., Halvorson, H. W., and Robinson, R. W.
COSTS AND EFFICIENCY OF WHOLESALE MILK DISTRIBUTION IN MILWAUKEE
Wis. Agr. Expt. Sta. Res. Bul. 196. 40 pp. May 1956.

With 17 dealers operating under the Federal Milk Marketing Order for Milwaukee, this study obtains representative routes of representative dealers so that averages obtained from the analysis of route operations would reflect costs of wholesale distribution in Milwaukee for the year 1954. Variable and fixed costs are summarized and compared with results of three similar studies.

Cowden, J. M.

FARM-TO-PLANT BULK AND CAN MILK HAULING COSTS.

U.S. Farmer Coop. Serv. Rpt. 18. 56 pp. March 1956.

Detailed analysis and comparisons of route operations indicated that larger payloads and less frequent pickup service associated with bulk operations resulted in reductions in time and mileage costs as compared to can hauling operations. Factors that affect comparative cost relationship are volume per patron, length of route, and route volume.

Davidson, Donald R.

HOW MANUFACTURING CO-OPS MARKET GRADE A MILK.

U.S. Farmer Coop. Serv. Circ. 26. 51 pp. Oct. 1960.

Reasons dairy manufacturing cooperatives diversify into fluid operations and cost of conversion. It helps answering the question: Should a manufacturing cooperative expand its operations to include handling Grade A milk?

Devino, Gary T.

COSTS AND SAVINGS UNDER ALTERNATIVE WHOLESALE DISTRIBUTION SYSTEMS.

Notes prepared for use in Management Workshop on Milk Distribution, Cornell Univ. Dept. of Agr. Econ. June 13-14, 1963.

Evaluations of distributing milk wholesale, and of associated distribution costs.

Dow, G. F.

REDUCING COST OF DISTRIBUTING MILK IN MAINE.

Journal of Farm Economics 21: 309-314. Feb. 1939.

Recommends that special attention be given to the following factors: larger volume per distributor; greater volume of sales per mile traveled on milk routes; stricter credit policy to reduce bad debts and collection costs; reduction of bottle losses; consideration of the use of horses instead of motor trucks on milk routes up to 15 miles in length; employment in general of only one man to a route; and curtailment of special services such as special deliveries.

Dow, G. F.

AN ECONOMIC STUDY OF MILK DISTRIBUTION IN MAINE MARKETS.

Maine Agr. Expt. Sta. Bul. 395. 150 pp. March 1939.

Methods and costs of distributing milk in Maine markets and a comprehensive analysis of the factors affecting these costs.

Dow, G. F.

RECEIPTS, UTILIZATION, AND PRICES OF MILK AND CREAM IN MAINE MILK CONTROL AREAS.

Maine Agr. Expt. Sta. Bul. 399: 71-183.

Shows developments in milk price regulation and analyzes milk distributors' records from May 1935 to December 1937. Describes the Maine milk market control areas, indicates trends in utilization and seasonal variation in receipts and utilization. Discusses prices paid producers, distributors' spread, and effect of price changes on consumption.

Dow, G. F.

SIZE OF LOADS AND DELIVERY COSTS FOR LABOR IN MILK DISTRIBUTION IN BOSTON AND PORTLAND.

Maine Agr. Expt. Sta. Bul. 437. 32 pp. June 1945.

Effect of wartime practices upon size of loads and trend in delivery costs for later in Portland and Boston. Efficiencies were observed, especially every-other-day delivery.

Downen, M. L. and Carter, J. C.

SALES OF MILK THROUGH OUTDOOR VENDING MACHINES BY ONE FIRM.

Tenn. Agr. Expt. Sta. Prog. Rpt. 1955.

Assesses impact and potential of vending machines on fluid milk sales, the organization and service rendered by outdoor milk vending and consumer reaction to service.

Federal Trade Commission.

DISTRIBUTION METHODS AND COSTS. PART VI. MILK DISTRIBUTION, PRICES, SPREADS AND PROFITS.

58 pp. June 1945.

1940 data from Commission's Corporation Reports project, supplemented with other data. 144 firms. 82 fluid.

Forker, O. D. and Clarke, D. A., Jr.

CHANGES IN MILK DELIVERY COSTS AND VOLUME PRICING PROCEDURES IN CALIFORNIA.

Univ. Calif. Giannini Foundation of Agr. Econ. Mimeo. Rpt. 236.

42 pp. Nov. 1960.

Analyzes differentials in delivery costs caused by varying volumes per stop in the Los Angeles market. Twenty-nine wholesale routes of 8 companies were studied in 1959, and results are compared with an earlier study in 1950.

French, Charles E.

RESEARCH PROCEDURE IN EVALUATING MILK RECEIVING LABOR IN INDIANA.

Purdue Univ. Agr. Expt. Sta. Bul. 575. Jan. 1952.

Study to (1) establish the variation in amounts of labor used, (2) determine reasons for this variation, (3) develop standards, and (4) synthesize, install and test improved arrangements under actual conditions.

French, Charles E., Wood, G. B. and Manhart, V. C.

LABOR UTILIZATION IN RECEIVING ROOMS OF INDIANA MILK PLANTS.

Purdue Univ. Agr. Expt. Sta. Bul. 576, in Coop. with Prod. and Mktg. Adm., USDA. 55 pp. July 1952.

Study established the variation in amount of labor used with present equipment and methods, reasons for variation, and production standards; also, synthesize, install and test improved standards under actual conditions.

French, Charles E. and Varney, Harry R., Jr.

LABOR UTILIZATION IN COLD STORAGE AND EMPTY BOTTLE ROOMS.

Purdue Univ. Agr. Expt. Sta. Res. Bul. 677. 23 pp. April 1959.

Improve efficiency of milk distribution by establishing reasons for variation in labor efficiency within cold storage and empty bottle rooms.

Glass Container Association of America

MILK CONTAINER COSTS, A STUDY IN COMPARISONS.

22 pp. 1939.

A study of milk packaging costs in seven dairies located in the East North Central and Middle Atlantic States. Of these seven dairies, four used both glass and paper containers; one glass only; and two, paper only.

Glass Container Association of America

YOUR MILK CONTAINER; A STUDY OF ITS COMPETITIVE PROGRESS IN OTHER MARKETS.

In Brown, E. F. Milk Papers 6(130): 1-23. June-Dec. 1939.

This study of conditions in 12 markets, as of August 1939, shows that consumers prefer the glass bottle to paper containers and that milk costs approximately 1¢ a quart less to package and deliver when glass bottles are used.

Gooding, D. I., Baumer, E. F., and Eickoff, W. D.

FACTORS RELATING TO THE SALE OF DAIRY PRODUCTS IN RETAIL STORES.

Ohio Agr. Expt. Sta. Res. Bul. 910. May 1962.

Relationships investigated were: Average sales of milk per \$1,000 of gross weekly store sales, dairy case space allocated to dairy products, functions performed by dairy clerks and setting of retail prices.

Hall, C. W.

OPERATIONAL COSTS IN A DAIRY PLANT--1952

Mich. Agr. Expt. Sta. Quarterly Bul. 36(1): 107-129. Aug. 1953

Presents graphs showing standard, or average, costs for performing various operations in a fluid milk and cream plant.

Hall, Nelson C.

MILK DISTRIBUTION COSTS AND PROFITS, WISCONSIN, 1920-1921.

St. of Wis. Dept. of Mkts. Bi-monthly Bul., Vol. V., No. 2. 21 pp.
April 1924.

This is the second investigation of seven milk distributors' costs and profits in Madison, Milwaukee, Racine, Kenosha and Eau Claire and covers the year 1921, which proved less profitable than 1920.

Hammerberg, D. O., Fellows, I. F. and Farr, R. H.

EFFICIENCY OF MILK MARKETING IN CONNECTICUT. 4. RETAIL DISTRIBUTION OF MILK BY PRODUCERS.

Storrs (Conn.) Agr. Expt. Sta. Bul. 243. 58 pp. Dec. 1942.

Some farmers added retail distribution of milk in an attempt to increase their income. Under special circumstances this can be a profitable enterprise because resources can be more completely utilized. From the price standpoint, the farmer does better because he can sell at the retail price or substantially above the wholesale market.

Hand, P. E. and Pierce, C. W.

COST STUDIES OF RECEIVING AND TRANSPORTING MARKET MILK IN THE PHILADELPHIA AREA.

Pa. Agr. Expt. Sta. A.E. and R.S. 6. 21 pp. Aug. 1956.

A determination of the cost in 1954-55 of handling milk at selected country receiving stations shipping to the Philadelphia market, the cost of receiving bulk milk from country receiving stations at city plants, and the cost of receiving milk shipped directly from farmers to city plants. Tables give a breakdown on plant operation costs.

Helmberger, J. D. and Koller, E. F.

QUANTITY DISCOUNT PRICING OF FLUID MILK.

Minn. Agr. Expt. Sta. Bul. 433. 32 pp. March 1956.

The relation of delivery cost to quantity is a highlight of this publication. Wholesale and retail delivery costs in Minneapolis receive special emphasis in the text with one table for 1952-53 showing the cost of delivery with respect to size of delivery.

Henry, W. F., Bressler, R. G., Jr., and Frick, G. E.
EFFICIENCY OF MILK MARKETING IN CONNECTICUT. 11. ECONOMIES OF SCALE
IN SPECIALIZED PASTEURIZING AND BOTTLING PLANTS.

Storrs (Conn.) Agr. Expt. Sta. Bul. 259. 61 pp. June 1948.

There are important cost advantages for large pasteurizing plants, but economies of scale are most pronounced in capacity ranges below 1,000 quarts per day. Costs continue to decline beyond this figure.

Herrmann, L. F.
MILK DISTRIBUTION COSTS IN WEST VIRGINIA.

W. Va. Agr. Expt. Sta. Bul. 282. 26 pp. June 1937.

A study of the cost incurred by 67 producer-distributors in the Charleston, Huntington, and Parkersburg markets for a 12-month period during 1935-36.

Herrmann, L. F. and Whatley, T. J.
COSTS AND MARGINS OF MILK DISTRIBUTORS IN MEMPHIS, TENNESSEE IN 1948.
U.S. Bur. Agr. Econ. 30 pp. 1950.

Shows sales, expenses and profits for a group of milk distributors in Memphis, Tenn. Compares expenses for retail and wholesale distributors, large and small dealers, and compares price spreads and measures of performance for Memphis with other markets.

Herrmann, L. F. and Baill, M.
FARM-TO-RETAIL MARGINS FOR FLUID MILK.
U.S. Bur. Agr. Econ. 29 pp. Nov. 1951.

Compares the 1948 and 1949 price spreads on fresh fluid milk among markets with respect to: Geographic location, population, differential between milk delivered to home and milk sold in stores, Government regulation, wage rates for drivers of milk trucks, level of prices paid farmers, differences between prices paid farmers for milk used for fluid milk and milk used for cream, price spread between milk used as fluid and milk used for producing cream and cottage cheese jointly, per capita consumption of milk and per capita income.

Herrmann, L. F. and Friend, Lloyd F.
FARM-TO-RETAIL PRICE SPREADS FOR FLUID MILK IN CHICAGO.
U.S. Agr. Mktg. Serv., Mktg. Res. Rpt. 246. 31 pp. June 1958.

Report analyzes factors that go into making of fluid milk prices and marketing costs and margins in the Chicago market area. Data from survey of 733 families.

Hicks, J. W. and Wood, G. B.
OPERATIONS IN RETAIL AND WHOLESALE MILK ROUTES.
Purdue Univ. Agr. Expt. Sta. Bul. 556. 43 pp. Nov. 1950.

Factors influencing the cost of delivery of milk as carried out in Indiana markets in 1948-49, with special emphasis being given to labor costs and the possible means of reducing delivery costs. Studies 14 dairies in Indianapolis, Fort Wayne, Gary, and Frankfort, and computes average times for each of the operations performed in a route.

Hirsch, D. E.

MILK DISTRIBUTION COSTS OF GEORGIA.

U.S. Farmer Co-op. Serv. Gen. Rpt. 16. 39 pp. May 1955.

Cost study made in 1953 of 13 milk distributing cooperatives in Georgia. Compares investment and operating costs of the 13 associations classified into 3 groups according to size.

Hitchcock, J. A.

REDUCING TRUCK MILEAGE IN RETAIL MILK DELIVERY.

Vt. Agr. Expt. Sta. Bul. 491. 12 pp. June 1942.

Investigation of possible savings of rubber in retail delivery, (1) every-other-day delivery and (2) consolidation of routes of all distributors into a unified system.

Hughes, E. M.

MILK RETAILING BY PRODUCER-DISTRIBUTION IN NEW YORK STATE.

N. Y. Agr. Col. Dept. Agr. Econ. and Farm Mangt. A.E. 239. 18 pp. Feb. 1939.

This study, made from detailed records of 92 producer-distributors located in upstate New York and on Long Island, shows capital invested, costs of distribution and sales outlets, and discusses factors affecting costs and profits.

Hurt, V. G.

COST AND EFFICIENCY OF SELECTED MISSISSIPPI FLUID MILK PLANTS.

Miss. Agr. Expt. Sta. Bul. 536. 30 pp. Aug. 1955.

Operating costs in 1952-54 are categorized and analyzed for 12 fluid milk plants. Plants were selected on the basis of size and type of operation, geographical location, type of records available, and influence of other plants within the State. Tables show average costs of management, processing, and distribution.

Jeffrey, Arthur D.

BALANCING PROBLEMS OF INDEPENDENT MILK DEALERS OPERATING SMALL AND MEDIUM SIZE PLANTS.

N. H. Agr. Expt. Sta. Bul. 460, Northeast Reg. Publ. 39. 30 pp. June 1959.

To ascertain for small independent milk dealers the relative importance of the methods of balancing used and reasons for preferring the most commonly used method. Data were obtained by individual interviews with 201 dealers in 4 of the northeast States and from related material.

Johnson, Jack D.
COST OF MARKETING MILK COOPERATIVELY IN GEORGIA.
Univ. Ga., M.S. thesis. 1948.

Johnson, S.
LOAD SIZE AND DELIVERY LABOR COST IN MILK DISTRIBUTION.
Conn. Agr. Expt. Sta. Bul. 264. 20 pp. March 1950.

Surveys 23 distributors, operating 471 retail and 97 wholesale milk routes in the 4 largest cities in Connecticut, and obtains data on route loads and delivery labor costs for the month of May 1946.

Johnson, Stewart and Brinegar, George K.
EFFICIENCY FACTORS AND CHANGES IN MILK DISTRIBUTION, 1946-1954.
Storrs (Conn.) Agr. Expt. Sta. Bul. 312. 30 pp. Sept. 1954.

Analysis seeks to obtain general knowledge of route delivery practices and trends, to provide standards of efficiency, to determine trends in distribution, to discover factors affecting costs and efficiency.

King, G. A. and Bressler, R. G., Jr.
EFFICIENCY OF MILK MARKETING IN CONNECTICUT. 12. WHOLESALE MILK DISTRIBUTION.
Storrs (Conn.) Agr. Expt. Sta. Bul. 273. 56 pp. July 1950.

Determines detailed time requirements on wholesale delivery routes and computes labor costs by applications of wage rates. Also, computes wholesale delivery truck costs. Applies labor and truck costs to estimate wholesale delivery costs and to determine the effects of volume per customer stop on delivery costs.

Kirkwood, E. K. and Blackstone, J. H.
MERCHANDISING DAIRY PRODUCTS IN ALABAMA RETAIL FOOD STORES.
Ala. Agr. Expt. Sta. Bul. 294. 62 pp. May 1955.

Studies 147 stores handling dairy products in Birmingham, Gadsden, Mobile, and Montgomery in 1952. Considers costs of handling fluid milk and evaluates source of the factors affecting these costs. Includes 44 tables in the appendix which aid in the evaluation.

Klein, J. E.
COSTS OF DISTRIBUTING MILK THROUGH VENDING MACHINES AND BY RETAIL AND WHOLESALE ROUTES, MARTINSBURG, W. VA.
U.S. Dept. Agric. Mktg. Res. Rpt. 228. 42 pp. May 1958.

Describes the operations and compares the costs of milk distribution by vending machines, home delivery, and wholesale routes, when vending is carried on as a complement rather than in competition with wholesale and retail route distribution. Both the physical and monetary costs involved in milk vending are presented as a guide in learning whether such operations are feasible.

Korzan, G. E.

COSTS OF DISTRIBUTING MILK IN MONTANA MARKETS.

Montana Agr. Expt. Sta. Bul. 462. 46 pp. July 1949.

Investigates and discusses distribution costs and factors affecting them. Most of the data secured from 42 milk distributors are for 1947, with some available for 1948.

Korzan, G. E. and Pfanner, J. A., Jr.

COSTS OF RETAILING MILK AMONG A GROUP OF GROCERY STORES IN PORTLAND, OREGON.

Oreg. Agr. Expt. Sta. Bul. 504. 16 pp. Oct. 1951.

Contains tables showing unit costs for handling milk in small, medium, and large grocery stores, and also by type of outlet, in June 1950. The sample includes 35 stores.

Korzan, G. E., Davis, A. B., and MacPherson, D. D.

COSTS OF DISTRIBUTING MILK IN THE PORTLAND MARKET.

Oreg. Agr. Expt. Sta. Bul. 510. 23 pp. Feb. 1952.

Average unit costs were computed from 1949 cost data obtained from 20 milk distributors in the Portland market. Unit costs were related to the size of business; costs of processing milk in glass and paper containers were compared; and costs of distributing milk at wholesale and retail were computed. Suggestions were made for reducing costs in milk distribution.

MacPherson, D. D. and Maldonado, Jesus L.

COSTS, NET MARGINS, AND SELLING PRICES OF BEVERAGES SOLD IN AN EMPLOYEE FOOD SERVICE.

U.S. Dept. Agric. Mktg. Res. Rpt. 464. 27 pp. April 1961.

Describes the relation of costs and margins to prices for beverages in a cafeteria operated for employees in an office building in Washington, D. C. During a 2-week period, 56 percent of the 106,000 beverage sales were coffee, 17 percent tea, 14 percent milk, and 13 percent other beverages. Major components of beverage cost were 40 percent for raw materials, 37 percent for labor, 18 percent for containers, and 5 percent other.

MacPherson, D. D.

MILK DISTRIBUTORS' OPERATIONS. ANALYSES OF GROWTH, SALES DISTRIBUTION, COSTS, AND PROFITS.

Econ. Res. Serv., ERS-84. 62 pp. Nov. 1962.

Collection of special analyses that have appeared in the series, "Milk Distributors' Sales and Costs," issued quarterly since July-September 1956.

Manning, T. W., Felberg, R., and Kristjanson, R. L.

MILK OR CREAM--WHICH IS MORE PROFITABLE FOR SOUTH DAKOTA FARMERS AND CREAMERIES?

S. Dak. Agr. Expt. Sta. Bul. 460. 27 pp. Feb. 1957.

A detailed cost analysis of 5 cooperative creameries in South Dakota to determine the profitability of shifting from farm separated cream to a whole milk operation. Operating costs for butter made from cream are compared with those incurred through conversion to whole milk, and comparative costs and returns to farmers and creameries are described for cream and milk.

Marshall, John, Jr.

COST OF DISTRIBUTING MARKET MILK IN SAN FRANCISCO FOR THE YEAR 1931.

Calif. Dept. of Agri., Div. of Markets. 1933.

Summary of cost of distributing market milk, wholesale and retail, by size of container in San Francisco, 13 dealers, who distributed 92.3 percent of all milk sold in San Francisco in 1931.

Marshall, John, Jr.

COST OF DISTRIBUTING MARKET MILK IN SAN FRANCISCO FOR THE YEAR 1932.

Calif. Dept. of Agri., Div. of Markets. 1933.

Summary of cost of distributing market milk, both wholesale and retail, by size of container, in San Francisco. Data are for 14 dealers who distributed 92.7 percent of all milk sold in San Francisco during 1932.

Marshall, John, Jr.

COST OF DISTRIBUTING FLUID MILK, CREAM AND OTHER DAIRY PRODUCTS IN THE LOS ANGELES SALES AREA FOR THE YEAR 1933.

Calif. Dept. of Agric., Div. of Markets. A preliminary report.

Unit cost, wholesale and retail, of distribution of milk and other products carried on the delivery trucks by distributors in the Los Angeles area.

Maryland Council of Defense

MILK COST SURVEY FOR THE WEEK NOVEMBER 26 TO DECEMBER 2, 1917.

Md. St. Col. and Pub. Serv. Com. Cooperating. 42 pp. Dec. 1917.

A cost survey in three parts, (1) cost of production up to the point at which milk is delivered to carrier, (2) cost of transportation and (3) cost of distribution up to the point at which milk is delivered to the consumer.

Massachusetts Milk Control Board.

SUMMARY REPORT ON COST OF DISTRIBUTING MILK IN THE BOSTON MARKET.

Rittenhouse. 204 pp. 1936.

An exhaustive analysis of data on dealers' spreads and the relative costs of the principle methods of distributing cream and milk to consumers.

McKay, A. W. and Manson, F. R.

LABOR EFFICIENCY AND EQUIPMENT UTILIZATION IN MARYLAND MILK RECEIVING PLANTS.

Md. Agr. Expt. Sta. Misc. Publ. 270. 28 pp. June 1956.

A study of 17 plants throughout the State of Maryland. Volume handled was found to be the most important factor determining relative efficiency in the use of labor and equipment.

McNell, E. R.

THE COST OF DISTRIBUTING MILK IN BINGHAMTON, N. Y.

N. Y. Agr. Col. (Cornell) Dept. Agr. Econ. and Farm Mangt., Farm Econ. 40. pp. 577-578. 1926.

Data are from a survey of 32 milk dealers in Binghamton, N. Y. for the year 1924.

Metzger, H. B. and Pierce, C. W.

MILK MARKETING BY PRODUCER-DISTRIBUTORS.

Pa. Agr. Expt. Sta. Bul. 544. 50 pp. Oct. 1951.

Costs of, and returns from, milk distribution of representative producer-distributors, and analyzes these data to determine variations in costs and returns and the factors responsible for the differences. From the records, 85 producer-distributors in Pennsylvania furnished information for the period June 1, 1947, to May 31, 1948.

Metzger, H. B.

COSTS OF OBTAINING PASTEURIZED MILK; A COMPARISON FOR SUBDEALERS AND SMALL PROCESSOR-DISTRIBUTORS.

Maine Agr. Expt. Sta. Bul. 515. 42 pp. May 1953.

Compares costs of procuring pasteurized milk by Maine subdealers in 1951, and costs of pasteurizing by small processor-distributors. The comparative efficiencies should aid small milk distributors in deciding whether or not to do their own pasteurizing.

Metzger, H. B.

THE TREND IN MILK DELIVERY EFFICIENCY AND LABOR COSTS IN PORTLAND, MAINE, 1941, 1951, 1954.

Maine Agr. Expt. Sta. Rpt. 50. 26 pp. Dec. 1954.

Assesses the extent to which World War II efficiencies of milk delivery had been carried into the post-war period and measures their effect on costs. Data are for the years 1941, 1951, and 1954, and were obtained from the records of the 4 largest distributors in the Portland market.

Metzger, Homer B.

LABOR UTILIZATION IN SMALL VOLUME MILK PASTEURIZING PLANTS.

Maine Mimeo. Rpt. 49. 33 pp. Dec. 1954.

A time study in 8 pasteurizing plants, summer 1952.

Metzger, Homer B.

CHANGES IN COSTS OF MILK DISTRIBUTION IN MAINE.

Maine Agr. Expt. Sta. Rpts. 19, 28, 36, 44, and 54. April 1951, May 1952, June 1953, June 1954 and July 1955.

A series of annual studies of changes in milk distribution costs based on changes in 19 items comprising an index. The index measures the effect of changes in prices, except that labor expense per quart of route sales is used as a measure of change, instead of wages alone. The percentage change in item cost is calculated, and another table lists the changes in costs.

Metzger, Homer B.

AN APPRAISAL OF MULTIPLE-QUART CONTAINERS, VOLUME DISCOUNTS AND STORE DIFFERENTIALS IN MILK DISTRIBUTION.

Maine Agr. Expt. Sta. Rpt. 56. 21 pp. Sept. 1955.

Investigates the adoption of multiple-quart containers and the effect of gallon-jug usage on marketing costs in various areas. Also, discusses volume discounts and unit costs for retailing milk in stores. Most of the cost data are for 1953 or 1954.

Metzger, Homer B.

COSTS OF MILK DISTRIBUTION IN 1955 AS COMPARED WITH 1945, AND CHANGES IN COSTS FROM 1955 to 1956.

Maine Agr. Expt. Sta. Mimeo. Rpt. 70. 6 pp. July 1957.

Plant, delivery, administrative and container expenses incurred by five large distributors were obtained and used to change the weights in a revised cost index.

Metzger, Homer B.

COSTS AND RETURNS IN FLUID MILK PROCESSING AND DISTRIBUTION IN MAINE, 1958-1960.

Maine Agr. Expt. Sta. Misc. Rpt. 103. 24 pp. Feb. 1962.

Study was undertaken to provide information about the financial returns to processor-distributors for milk. It is useful in judging whether or not margins have permitted reasonable returns in the past and can assist in establishing price levels for the future.

Metzger, H. B.

OPPORTUNITY FOR REDUCING DELIVERIES ON RETAIL MILK ROUTES IN PORTLAND, MAINE.

Maine Agr. Expt. Sta. 22 pp. July 1962.

Study of consumer reactions to reducing frequency of home delivery. Such reduction offers considerable potential for lowering route labor and truck operating expenses.

Metzger, Homer B.

TWICE-WEEKLY DELIVERY ON RETAIL MILK ROUTES.

Maine Agr. Expt. Sta. Bul. 612. 28 pp. March 1963.

Analysis indicated that initially most customers oppose reduction in service. Lack of refrigeration space and doubts as to the freshness of the milk are obstacles to overcome. Dealers were split in their acceptance.

Moe, E. Lyle and Christensen, S. Kent

ECONOMICS OF BULK MILK DISPENSERS FOR HOME USE.

Oreg. Agr. Expt. Sta. Bul. 575. 23 pp. Dec. 1960.

Conditions under which study was made indicated no cost savings from processing, packaging, and distributing milk in bulk cans as compared to paper containers. Advantages to a dairy would have to accrue from increased sales of milk per household, from new customers, and from increased sales of byproducts.

Monroe, W. J. and Walker, S. A.

AN ECONOMIC STUDY OF SMALL FLUID MILK PLANT PROBLEMS IN NORTHERN IDAHO.

Idaho Agr. Expt. Sta. Bul. 255. 43 pp. March 1956.

Annual data were obtained from the records of six plants in November 1953. Basic model plants are set up, and operating costs itemized. The effect of increasing volume on cost reductions is also discussed.

Monroe, William J.

MULTIQUART CONTAINERS--THEIR EFFECT ON MILK PACKAGING AND HANDLING COSTS IN SELECTED COOPERATIVES.

U.S. Farmer Coop. Serv. Gen. Rpt. 90. 42 pp. April 1961.

Practices and costs of eight farmer co-ops packaging fluid milk in multi quart containers. Also, analyzes the alternatives and their effects.

Moon, H. A.

ANALYZING PACKAGING OPERATION COSTS.

Mod. Packaging 14(3); 77-80. Nov. 1940.

Four types of analysis are used involving the investigation of lost motion, the correlation between men and machines, the relationship of the packaging operations to other operations that come either before or after the actual packaging, and the part that the packaging operations play in creating peak loads for power systems, for labor and the use of refrigeration or other machinery. The application of this method to a milk pasteurizing and bottling plant is shown.

Mortenson, W. P.

ECONOMIC CONSIDERATIONS IN MARKETING FLUID MILK.

Wis. Agr. Expt. Sta. Res. Bul. 125. 56 pp. Dec. 1934.

Margins (from FMCR) 1927-33, 20-odd markets. Distributors' costs and profits (from Wis. income tax), 10 Wis. distributors, 1927-32. Milk price plans. Competition of evaporated and fresh milk.

Myrick, N.

THE LAWSON STORY.

Amer. Milk Rev. 17(8): 32-34, 36, 107. Aug. 1955.

Operating on a margin of 4 cents a quart for processing and distributing in gallon jugs, the Lawson Milk Company of Akron, Ohio, has achieved its unique success through spectacular savings in container costs and large-volume delivery. Gives details on cost reductions, and discusses the company's vertical control.

New York City

MAYOR'S COMMITTEE ON MILK.

New York. 85 pp. 1917.

Cost of distribution, surplus milk, market prices and price fixing and economies in distribution.

New York State Temporary Commission on Agriculture

AN ANALYSIS OF THE SPREAD BETWEEN FARM AND CONSUMER MILK PRICES IN NEW YORK CITY UNDER PRESENT PRACTICES.

Williams Press, Inc., Albany, N.Y. Legislative Document (1949), Part I of the Annual Report (1948-49). 94 pp.

New York State Temporary Commission on Agriculture

AN ANALYSIS OF THE SPREAD BETWEEN FARM AND CONSUMER MILK PRICES IN BUFFALO UNDER PRESENT PRACTICES.

Williams Press, Inc., Albany, N.Y. Legislative Document (1950), Part I of the Annual Report (1949-50). 73 pp.

New York State Temporary Commission on Agriculture

AN ANALYSIS OF THE SPREAD BETWEEN FARM AND CONSUMER MILK PRICES IN AMSTERDAM UNDER PRESENT PRACTICES.

Williams Press, Inc., Albany, N.Y. Legislative Document (1951), No. 17A, Part 2 of the Annual Report (1950-51). 42 pp.

These 4 studies examine the costs borne by, and profits earned by, distributors of fluid milk and cream in the various cities, using data for the year prior to publication. Spreads are calculated and statistical tables are compiled for all functions from production through consumer sale. Special attention is given to store and retail margins, transportation to bottling and pasteurizing plants, and retail and wholesale delivery of milk.

New York State Temporary Commission on Agriculture
AN ANALYSIS OF THE SPREAD BETWEEN FARM AND CONSUMER MILK PRICES IN
BINGHAMTON UNDER PRESENT PRACTICES.

Williams Press, Inc., Albany, N. Y. Legislative Document (1951),
No. 17A, Part I of the Annual Report (1950-51). 51 pp.

New York State Temporary Commission on Agriculture
THE SPREAD BETWEEN FARM AND CONSUMER MILK PRICES IN NEW YORK STATE
MARKETS.

Williams Press, Inc., Albany, N. Y. Legislative Document (1951),
No. 34, Part 3 of the Annual Report (1950-51). 40 pp.

Describes and analyzes price spread relationships and differences in
New York City, Buffalo, Binghamton, and Amsterdam.

New York State Temporary Commission on Agriculture
A MANUAL OF PROCEDURES FOR MILK PRICE SPREAD ANALYSIS IN NEW YORK STATE.

Williams Press, Inc., Albany, N. Y. 121 pp. April 1951.

Provides a description of the basic techniques to be used in a study
of spreads. Included with a discussion of typical costs encountered,
are sections dealing with commission costs, bad debt losses and milk
losses. Procedures for costing a typical plant processing operation
are illustrated, as well as a time study of cost techniques applied to
distribution functions.

Olson, R. E.

AN ANALYSIS OF OPERATING COSTS OF SELECTED MILK DEALERS.

U.S. Bur. Agr. Econ., annual convention of Milk Industry Foundation,
Boston, Mass. 21 pp. Oct. 27, 1953.

Olson, R. E.

REDUCING MILK MARKETING COSTS.

U.S. Agr. Mktg. Serv., Ann. Mtg. of Northeast Dairy Conf. 10 pp.
March 26, 1954. (Reprinted in Northeast Dairy Conf. Proc. and in
Milk Plant Monthly, 43: 25-27, May 1954, under the title Marketing Costs.)

Olson, R. E.

CHANGES IN COSTS OF PROCESSING AND DISTRIBUTING MILK, 1952-54.

U.S. Agr. Mktg. Serv. 7 pp. March 1955. (Address at meeting of
Southeast Milk Plant Accountants, Charlotte, N. C., March 11, 1955.)

Olson, R. E. and Herrmann, L. F.

RECENT FINDINGS ABOUT MILK DISTRIBUTION COSTS.

U.S. Agr. Mktg. Serv., 49th Ann. Conv. of the Milk Industry Foundation,
Atlantic City, N. J. 5 pp. Nov. 2, 1956.

The above 4 reports explains results of a continuing study of operating
costs and efficiency among selected milk dealers. Include data sepa-
rately from 1952 through March 1956. Consider relative importance of
costs entering into milk processing and distribution and appraise possi-
bilities for reducing costs.

Owens, T. R. and Butz, W. T.

SPECIFICATIONS AND COSTS FOR PROCESSING OPERATIONS IN SMALL MARKET MILK PLANTS.

Pa. Agr. Expt. Sta. Bul. 625. 41 pp. Aug. 1957.

Analysis of relationship between volume of output and unit processing cost of two small milk plants. Short and long run analyses were made. The former demonstrated reductions in unit costs associated with more intensive use of given facilities, the latter illustrated the effect of size of plant on unit costs.

Padgett, J. H.

AN ANALYSIS OF MILK VENDOR OPERATIONS IN SOUTH CAROLINA.

Clemson Agr. Expt. Sta. Circ. 100. 15 pp. Nov. 1955.

Describes automatic merchandising costs and returns based on a study of 50 vending machines in various South Carolina localities. Tables include data for 1955.

Park, C. W.

MILK PACKAGING FOR RETAIL DISTRIBUTION.

A. H. Pugh Printing Co., Cincinnati, Ohio. 186 pp. 1956.

In order to make a comparison of costs in the use of glass and paper containers under exactly similar conditions, the Suabedissen-Wittner Dairy of South Bend, Ind., was studied for 11 weeks in 1954 as an all-glass operation. It then converted to paper only for a 12-week period in 1955, and a continuing study was made of cost factors involved not only in packaging and related plant operations, but also in the delivery of products to the consumer. Discusses and tabulates results of the survey on a comparative basis.

Perry, Alvah L.

COSTS OF DISTRIBUTING MILK IN MAINE MARKETS.

Maine Agr. Expt. Sta. Bul. 451. 105 pp. July 1947.

Purpose of study to determine present-day cost and practices of distributing milk and to make a detailed analysis of the factors affecting these costs. Report is based on information obtained by personal interview with 188 milk distributors in Maine Milk Control Board areas. Distributors interviewed handled 77 percent of the milk and cream in the surveyed area.

Pierce, C. W. and Cooper, J. G.

GALLON JUG MILK SALES ON PENNSYLVANIA DAIRY FARMS.

Penn. Agr. Expt. Sta. Prog. Rpt. 249. 28 pp. Oct. 1963.

Costs per gallon for processing and selling milk at farms in gallon jugs for variety of operations.

Pierce, C. W., Butz, W. T. and Knutson, R. D.
BASIS FOR RESALE PRICE DIFFERENTIALS IN THE YORK MARKETING AREA.
Pa. Agr. Expt. Sta. A.E. and R.S. 45. 65 pp. Nov. 1963.

Analysis of the types and level of resale prices, differentials and their justification of present and potential costs.

Potter, P.
EFFECTS OF UNION CONTRACTS ON THE RETAIL ROUTE BUSINESS.
Amer. Milk Rev. 23(1): 28-29, 97-98. Jan. 1961.

Discusses advantages and disadvantages of company-owned routes versus independently-owned routes and efficiency of a 5-day delivery operation.

PRICE OF MILK.
U.S. Agr. Mktg. Serv. Leaflet 409. Revised May 1958.

Presents analysis of price of a quart of milk on basis of average U.S. data for 1957.

Pringle, George E., Olmeda, Ramon, Velez, Rios, Jose, Mariano, and Hernandez, Leslie
COSTS OF PASTEURIZING-HOMOGENIZING MILK IN PUERTO RICO.
P. R. Agr. Expt. Sta. E. and R.S. 57. 10 pp. Dec. 1959.

Costs from accounting records of 12 of the 13 milk plants in Puerto Rico, 1956-57.

Pringle, George E.
A STUDY OF FLUID MILK MARKETING COSTS AND PRICES IN PUERTO RICO.
P. R. Agr. Expt. Sta. Bul. 158. 55 pp. May 1961.

To provide consumers, dairymen and the milk industry with information concerning factors in the movement of fresh milk from the dairy farm to the consumers. Factors are (1) retail outlets, (2) geographic distribution, (3) costs of milk deliveries, (4) compare retail prices with costs of services rendered, (5) evaluate factors which determine direction of milk flow.

Pritchard, N. T. and Cope, W. H.
MILK ASSEMBLY IN THE FORT WAYNE MILKSHED.
Purdue Univ. Agr. Expt. Sta. Bul. 559. 24 pp. Feb. 1951.

Milk assembly costs in the Fort Wayne milkshed in the fall of 1949; determines the chief factors affecting haulers' returns; develops a system of hauling rates reflecting costs of service; and recommends changes in hauling practices likely to lower hauling costs.

Production and Marketing Administration
MILK PRODUCTS, COSTS, PRICES, AND PROFITS OF WAR FOOD PURCHASES.
U.S. Dept. Agric. 72 pp. Sept. 1944.

With the rapid growth in food procurement, the War Food Administration's need for authoritative data on costs and profits led to the organization in 1943 of the Cost Investigations Division of the Compliance and Investigation Branch in the Production and Marketing Administration. This division made investigations with respect to many food items. The present report on costs and profits of dairy products is based largely on the data obtained in one such investigation in which several agencies participated.

Purcell, J. C. and Penny, N. M.
COST OF PROCESSING AND DISTRIBUTING MILK IN THE SOUTH.
Southern Cooperative Series Bul. 15. 40 pp. June 1955. (Agr. Expt. Stas. of Ala., Ark., Ga., La., Miss., N. C., S. C., Tenn., Tex., and Agr. Mktg. Serv. cooperating.)

Analyzes cost per unit in receiving, processing, distribution, and administration; processing costs are analyzed by major cost items as filling costs, containers and supplies; cost comparisons are made between type of container and size of plant; the relationship of costs to volume is discussed and illustrated with charts; a statistical index is included. Data for this survey were gathered from records in 16 fluid milk plants in Georgia, Mississippi, South Carolina, and Tennessee in 1952-53.

Rinear, E. H. and Moore, H. C.
RETAILING MILK IN IACONIA.
N. H. Agr. Expt. Sta. Bul. 272. 20 pp. June 1933.

Analysis to determine a more efficient method of distributing milk because the number of producer-distributors is considered large in relation to population.

Rinear, E. H.
MILK DISTRIBUTION COSTS OF PRODUCER-DISTRIBUTORS AND SUBDEALERS IN NEW JERSEY.
N. J. Agr. Expt. Sta. Bul. 663. 56 pp. March 1939.

Distribution costs involved in processing, bottling, and delivering milk, the relationships between volume of business, capital, and labor, and the conditions whereby one distributor has lower costs than another.

Roberts, J. B., Williams, S. W., and Whitted, S. F.
MERCHANDISING MILK AND DAIRY PRODUCTS IN RETAIL GROCERY STORES.
Ky. Agr. Expt. Sta. Cir. 551, North Central Reg. Publ. 78. 52 pp. June 1957.

Methods of handling and merchandising milk in 235 stores, effectiveness of various displays, handling margins and store sales, income and store margins.

Robinson, K.

A STUDY OF FLUID MILK MARGINS IN NORTHEASTERN CITIES.

Harvard studies in marketing farm products No. 8-H. 36 pp. June 1954.

Considers factors causing 50 percent higher fluid milk margins in some markets than in others. The cities studied were Boston, Portland, Providence, Hartford, New York, Philadelphia, Baltimore, and Washington, D. C. The intermarket margin relationships and the factors associated with intermarket differences in fluid milk margins are singled out for investigation, based on 1950 data.

Robinson, R. W.

COSTS AND EFFICIENCY OF WHOLESALE MILK DISTRIBUTION IN MILWAUKEE WITH PARTICULAR REFERENCE TO PROBLEMS OF WHOLESALE PRICING.

Univ. of Wis. Ph. D. Thesis. 196 pp. 1957.

Routes from five milk firms were studied. Labor operations were timed with stopwatches. Average cost per stop in 1954 was \$1.128 of which \$0.934 was labor cost and \$0.294 was truck expense. No conclusive answer was reached concerning cost variation associated with different sizes and types of containers.

Rochester, N. Y. Common Council

Committee on Public Safety. Report of Rochester Milk Survey, Rochester. 227 pp. 1919.

Survey of costs of distribution.

Roof, James B.

MILK RECEIVING COSTS DURING SHIFT FROM CAN TO BULK.

U.S. Farmer Coop. Serv. Gen. Rpt. 77. 27 pp. July 1960.

Study is devoted to plant operating costs during transition from can to bulk receiving of milk. Findings can help plant management plan change to bulk system, also, how costs during transition affect returns to farmers.

Ross, H. A.

THE MARKETING OF MILK IN THE CHICAGO DAIRY DISTRICT.

Ill. Agr. Expt. Sta. Bul. 269. pp. 461-540. June 1925.

Production, consumption, problem of surplus milk, course of milk prices. Retail prices on routes, milk and cream, 1902-1923. Prices paid by dealers at country plants, 1907-1924.

Schlenker, A. A. and Parker, E. J.

MARGINS ON FLUID MILK IN THE DULUTH-SUPERIOR MARKETING AREA, 1947-48.

U.S. Dept. Agric. Mktg. Res. Rpt. 32. 55 pp. Jan. 1953.

Develops a measure of the composite margin received by dealers for all fluid products sold in the area, and provides comparisons with margins for the individual items. Shows effects on dealers' margins of two different types of quantity discount plans, which enable distributors to calculate precisely the price structure which will yield a chosen over-all margins.

Schultz, Stanley R.

AN ANALYSIS OF GROSS MARGINS FOR FRESH FLUID MILK PRODUCTS IN THE AKRON, OHIO, MILK MARKET.

Ohio St. Univ. M.S. Thesis. 1957.

Schutz, Willard

MARKETING PRACTICES OF WYOMING DAIRY PLANTS.

Wyo. Agr. Expt. Sta. MC-152. 7 pp. April 1961.

Methods used to encourage milk consumption and the effectiveness of methods used. The latter are advertising and promotion, the costs of which are given.

Scott, R. A.

LABOR UTILIZATION IN SMALL VOLUME MILK PASTEURIZING AND BOTTLING PLANTS.

Cornell Univ. Agr. Expt. Sta. Bul. AE-850. 36 pp. April 1953.

Determines the influence of various factors, other than volume, on the unit costs of operating pasteurizing and bottling plants. Four plants handling a daily fluid milk volume of 2,500-3,500 quarts are examined. Labor costs and other operating expenses for 1951 are taken from records of the 4 plants, located in central and southern New York.

Seaver, S. K. and Bressler, R. G., Jr.

EFFICIENCY OF MILK MARKETING IN CONNECTICUT. 8. POSSIBLE MILK DELIVERY ECONOMIES IN SECONDARY MARKETS.

Storrs (Conn.) Agr. Expt. Sta. Bul. 68 pp. May 1944.

A study of secondary markets in Connecticut indicating inefficiency in milk distribution because of route duplication, cross hauling, excess truck and labor capacity. Improvements would require important changes in the distribution system, however, in their most effective stages would involve public or private monopolies.

Simmons, Richard L.

CASE HANDLING COST IN FLUID MILK PLANTS.

N. C. Agr. Expt. Sta. A. E. Inf. Series 81. 127 pp. Dec. 1960.

Costs of case handling in fluid milk plants. Four different methods were analyzed for model plants comparable to actual plants. A complete list was made of the inputs and services necessary together with respective estimates.

Simmons, Richard L.

WHOLESALE MILK DISTRIBUTION PRACTICES, COSTS AND PRICING IN NORTH CAROLINA.

N. C. Agr. Expt. Sta. A. E. Inf. Series 88. Feb. 1962.

Purpose of study to analyze factors affecting distribution costs and to point out ways of decreasing costs. Particular emphasis placed on estimating effects on costs of type of delivery service and size of delivery. Nineteen wholesale delivery routes analyzed.

Smith, H. V. and MacPherson, D. D.

MILK DISTRIBUTORS' SALES AND COSTS, JULY-SEPT. 1956.

U.S. Agr. Mktg. Serv. Bul. 180. 7 pp. April 1957.

This is the first of a series of published data showing milk distributors' sales and costs per unit of product in various geographic areas of the country. Data are for typical firms selected on the basis of ownership and size and their costs analyzed, with recent trends tabulated annually for 1952-54 and quarterly for January 1955 to September 1956.

Snyder, James C. and French, Charles E.

SELECTION OF A PRODUCT LINE FOR A FLUID MILK PLANT BY ACTIVITY ANALYSIS.

Purdue Univ. Agr. Expt. Sta. Bul. 667. 35 pp. Aug. 1958.

Study illustrates in some detail for the first time how an electronic digital computer can be used to select the best line of products for a fluid milk plant, employing activity analysis.

Solzan, F. B.

COST OF PACKAGING.

Milk Plant Monthly 44(2): 14-16, 68. Feb. 1955.

Describes packaging costs of glass versus paper containers for 60 milk plants which are served by the cost accounting firm, Edward B. McClain Company. Examines container costs in April-June 1954. Charts accompany the text discussion.

Spencer, Leland

COSTS AND PROFITS OF MILK DEALERS IN NEW YORK CITY, AUGUST 1933.

Report to Div. of Milk Control, N. Y. State Dept. of Agric. and Mkts. April 16, 1934.

Detailed studies provide definite and reliable data concerning milk dealers' costs and profits for a single month. They have also produced information on the financial organization, business practices, and accounting procedures.

Spencer, Leland

COSTS AND PROFITS OF MILK DEALERS IN UPSTATE CITIES, AUGUST 1933.

Report to New York Milk Control Board. March 1934.

Detailed information concerning the operations of 21 upstate milk dealers obtained by means of a survey and verified by a public accounting firm.

Spencer, Leland

COSTS AND PROFITS OF MILK DEALERS IN NEW YORK CITY, AUGUST 1933.

Report to Division of Milk Control, N. Y. St. Dept. of Agric. and Mkts. April 16, 1934.

Data and analysis of costs and profits in August 1933. This is verified and detailed information concerning the operations of 19 milk dealers.

Spencer, Leland

WAYS OF REDUCING COSTS OF DISTRIBUTING MILK IN NEW YORK.

Jour. Farm Econ. 21(1): 291-298. Feb. 1939.

Deals with changes in price spread on grade B milk; items in spread on grade B retail milk; changes in costs; costs of distribution through stores; use of paper containers; and maladjustment of prices and wages. The necessary adjustments resulting from the adoption of new methods and equipment requiring less labor in distribution would be much less painful if commodity prices were to rise in the near future to 40 percent or more above prewar. The Government can assist in promoting more efficient methods of distribution by providing adequately for research and education in this field, and by seeing to it that fair opportunity is given for the exploitation of new methods and devices.

Spencer, Leland

COSTS OF DISTRIBUTING MILK IN NEW JERSEY.

N. J. Dept. of Agric. 98 pp. May 1943.

Summary of findings, with some interpretations and conclusions, from the study of milk distribution costs that was authorized by the New Jersey Legislature, effective July 1, 1942.

Spencer, Leland

COSTS OF DISTRIBUTING MILK IN THE NEW YORK-NEW JERSEY METROPOLITAN AREA.

Cornell Univ. Agr. Expt. Sta. Bul. A.E. 528, Prel. Rpt. 110 pp. Sept. 1945.

Analysis of costs of selling and delivering milk in the N. Y.-N. J. Metropolitan area before and after adoption of wartime conservation measures. It is anticipated that the findings may be helpful to consumers, distributors and deliverymen in determining whether restrictions on milk delivery services should be continued after the war.

Spencer, Leland

COSTS OF SELLING AND DELIVERY ON WHOLESALE MILK ROUTES IN THE NEW YORK-NEW JERSEY METROPOLITAN AREA.

Cornell Univ. Agr. Expt. Sta. Bul. A. E. 528-B, Prel. Rpt. 26 pp. Oct. 1945.

Analysis of cost records for April-May 1942 and April-May 1944. Between these periods important changes were made in delivery practices and operations. Purpose was to keep prices and living costs stable during the war.

Spencer, Leland

AN ECONOMIC STUDY OF THE OPERATION OF SIX LEADING MILK COMPANIES IN THE NEW YORK-NEW JERSEY METROPOLITAN AREA, 1941-1948.

Cornell Univ. Agr. Expt. Sta. Bul. A.E. 686. 46 pp. Jan. 1949.

Spencer, Leland

SALES, EXPENSES AND PROFITS OF SIX LEADING MILK COMPANIES.

Cornell Univ. Agr. Expt. Sta. Bul. A. E. 528-C. 15 pp. Oct. 1947.

Determines cost of selling and delivering milk and effect of various factors, such as every-other-day delivery. Financial statements were also analyzed and brought up to date.

Spencer, Leland

RECENT TRENDS IN THE SALES, COSTS AND PROFITS OF MILK DEALERS IN THE NEW YORK MARKET.

Cornell Univ. Agr. Expt. Sta. Bul. A. E. 774. 9 pp. Oct. 1951.

Details based on the operating results of 36 milk dealers in the New York Metropolitan Milk Marketing Area are presented for 1946-50, with changes in sales, costs, and profits during that period tabulated.

Spindler, H. G.

LABOR COST ON RETAIL MILK ROUTES IN SPRINGFIELD, MASSACHUSETTS.

Mass. Agr. Expt. Sta. Bul. 478. 35 pp. Aug. 1954.

Studies the operation of 7 large and medium-sized companies for the week ended April 26, 1952. Analyzes physical characteristics of the routes and discusses load value and dealer margins, driver wage costs and relation of cost and values to physical factors.

Spindler, H. G.

LABOR COSTS ON WHOLESALE MILK ROUTES IN SPRINGFIELD, MASSACHUSETTS.

Mass. Agr. Expt. Sta. Bul. 498. 44 pp. Jan. 1958.

Analyzes wholesale and retail route trends in evaluating future potential of home delivery. Driver labor time and its cost are of primary concern, but data on truck costs were also compiled for 7 firms for a week in April 1952.

Spindler, H. G.

EFFECTS OF SALES OF MILK IN MULTIPLE QUART CONTAINERS.

Mass. Agr. Expt. Sta. Bul. 507. 23 pp. Jan. 1959.

Objectives of study are to determine (1) changes in store volume and containers used, (2) changes in prices and margins, (3) effects of lower priced multiple containers on per capita consumption.

Starr, G. W.

MILK PROCESSING AND DISTRIBUTION COSTS--1961.

Milk Industry Foundation, Washington, D. C. 4 pp. 1961.

The tenth of a series of studies sponsored by the Milk Industry Foundation on the costs of milk distribution. Work on the series is performed at Indiana University, and this report is based on data from 276 plants located in 40 different States and the District of Columbia. Relative, rather than unit, costs are given for the various functions within a milk distributing operation, with average operating results tabulated in terms of net trade sales in 1961.

State of Wisconsin

Staff of the Legislative Council. Report of the Special Joint Committee on Dairy Price Spreads to the 1955 Legislature.

State Capitol, Madison, Wis. pp. 2072-2142. June 1955.

Gives details on dairy margins, prices and costs, with special attention to the Wisconsin farmer's share of the consumer's fluid milk dollar and an explanation of why fluid milk margins behave as they do.

Stelzer, R. O. and Thurston, L. M.

MILK DISTRIBUTION COSTS IN WEST VIRGINIA. I. A STUDY OF THE COSTS INCURRED BY 22 PLANTS DURING 1933.

W. Va. Agr. Expt. Sta. Bul. 266. 36 pp. April 1935.

Purpose to determine the cost of distributing milk in West Virginia which were obtained from 22 plants for 1933. Data show various costs incurred and the spread received for the various services performed.

Stitts, T. G.

MILK COOPERATIVES IN FOUR OHIO MARKETS.

U. S. Farm Credit Admin. Bul. 16. 73 pp. April 1937.

Dealers' margins on home-delivered quarts, Akron, Columbus, Dayton, Portsmouth, 1923-35.

Story, Robert P.

COSTS OF MILK DISTRIBUTION IN LOCAL VERMONT MARKETS.

Vt. Agr. Expt. Sta. Bul. 545. 36 pp. Nov. 1948.

Milk retailing operations of 61 dealers were surveyed to study variations of costs and profits, also the factors responsible for these variations. Purpose was to improve organization and management of milk in distribution.

Strain, R., Jr. and Christensen, S. K.

RELATIONSHIP BETWEEN PLANT SIZE AND COST OF PROCESSING FLUID MILK IN OREGON.

Oreg. St. Col. Agr. Expt. Sta. Tech. Bul. 55. 43 pp. Nov. 1960.

Purpose of study was to determine relationship between size of plant and unit processing costs for fluid milk plants. Processing costs decline as plant size increases, but study did not locate the low point on the long run average cost curve.

Sykes, J. G.

MILK VENDING IN VERMONT.

Vt. Agr. Expt. Sta. Bul. 592. 12 pp. June 1956.

Compares the advantages and disadvantages and operating costs for hand-operated and automatic milk vendors, which were placed in 8 different locations in May 1955.

Taylor, James C. and Brown, Ralph W.

FLUID MILK PLANTS IN THE SOUTHEAST, METHODS, EQUIPMENT, AND LAYOUT.

U. S. Agr. Mktg. Serv. coop. with Ga. Agr. Expt. Sta., Mktg. Res. Rpt. 232. 77 pp.

To measure effects of innovations, such as more efficient types of equipment, bulk shipments, paper containers and dispenser cans, on work methods in fluid milk plants in Georgia.

Tedford, J. R. and Domike, A. L.

EFFICIENCY OF MILK DISTRIBUTION IN RHODE ISLAND.

R. I. Agr. Expt. Sta. Bul. 333. 22 pp. June 1956.

Investigates distribution practices and effect of elimination of Sunday deliveries on retail routes. Twenty tables include data for 1951-54.

Tinley, J. M.

REDUCING COST OF DISTRIBUTING MILK IN CALIFORNIA.

Jour. Farm Econ. 21: 299-308. Feb. 1939.

Reduction in cost of distributing fluid milk involves the problems of how to determine potential, immediate and long-time reductions in unit costs (or increased efficiency) and how to induce the milk distribution industries in individual markets to adopt the necessary economies. The success of an industry program depends upon the development of a uniform detailed system of cost accounting and cost allocation, and upon the establishment of an adequately financed research agency whose main function would be to conduct continuing analyses, based on cost and investment data supplied by individual distributors, of ways and means of increasing efficiency and reducing unit costs of distribution.

Ulrey, O.

KALAMAZOO MILK MARKET.

Mich. Agr. Expt. Sta. Spec. Bul. 300. 44 pp. Dec. 1939.

Includes material on milk prices and distribution costs.

U.S. Federal Trade Commission

REPORT.....ON THE SALE AND DISTRIBUTION OF MILK AND MILK PRODUCTS.

74th Cong. 2nd Sess., H. Doc. 387. 125 pp. 1936.

Discusses the determination of prices to milk producers, investment costs, and net profits of milk distributors, effects of different methods of allocating expense on delivery costs of products, and margins and costs per unit.

U. S. Federal Trade Commission

REPORT.....ON THE SALE AND DISTRIBUTION OF MILK AND MILK PRODUCTS, CHICAGO SALES AREA.

74th Cong., 2nd Sess., H. Doc. 451. 103 pp. 1936.

Milk distribution, prices of milk and cheese, activities of distributors, and of farmers' cooperatives.

U. S. Federal Trade Commission

REPORT.....ON THE DISTRIBUTION AND SALE OF MILK AND MILK PRODUCTS, BOSTON, BALTIMORE, CINCINNATI, ST. LOUIS.

74th Cong., 2nd Sess., H. Doc. 501. 243 pp. 1936.

Includes description of markets, cooperative associations, and regulatory agencies.

U. S. Federal Trade Commission

REPORT.....ON THE SALE AND DISTRIBUTION OF MILK AND MILK PRODUCTS, TWIN CITY SALES AREA.

74th Cong., 2nd Sess., H. Doc. 506. 71 pp. 1936.

Deals with milk distributors, health regulations, the Twin City Milk Producers Association, and milk prices in the area.

Webster, F. C.

SPECIFICATIONS AND COSTS FOR A MODERATELY SMALL MILK PASTEURIZING AND BOTTLING PLANT.

Cornell Univ. Agr. Expt. Sta. Bul. A.E. 1031. 39 pp. May 1956.

Predicts costs incurred under various alternative processing methods through the use of a basic model plant. Modifications tested include: Changes in volume, use of a high-temperature-short-time pasteurizer, bottling in paper containers, and a bulk receiving operation. Various unit and operating costs are allocated to the different cost centers within the framework of each modification in 18 tables.

Webster, Fred, Bradfield, Alec, Bowring, J. R., Moore, H. C. and Taylor, K. A.

ECONOMIES OF SIZE IN FLUID MILK PROCESSING PLANTS.

Vt. Agr. Expt. Sta. Bul. 636, in coop. with N. H. Agr. Expt. Sta.
32 pp. June 1963.

Study gives detailed costs of milk-processing plants at daily capacities of 6,000, 20,000, 50,000 and 100,000 quarts for a 5-day week operation.

Wilhelm, R. B.

TRENDS IN MILK PACKAGING--GLASS BOTTLES.

Internatl. Asso. Milk Control Agencies, Ann. Mtg., 17:46-59. 1953

Compares cost for glass and paper milk containers for 1952 and discusses costs associated with a dual operation. Also considers the use and unit cost of the glass gallon jug.

Williams, S. W.

COST AND RETURNS TO ALABAMA MILK DISTRIBUTORS.

Ala. Agr. Expt. Sta. Bul. 287. 70 pp. June 1953.

Studies expenses, receipts, and net incomes of Alabama milk distributors, and examines reasons for variations among them. Suggests ways to reduce processing and distribution costs. Data are obtained from the records of 35 milk distributors for 1948 and from 20 distributors for the first 6 months of 1949.

Wison, Lowell E.

AN ANALYSIS OF DISTRIBUTION COSTS AND MARGINS FOR FLUID MILK.

Univ. of Ill. Ph. D. Thesis. Feb. 1960.

Gross margins for one distributor in 90 markets and costs in a number of markets.

DAIRY PRODUCTS

General

Bartlett, R. W.

THE BEHAVIOR OF MARKETING MARGINS ON DAIRY PRODUCTS.

Jour. Farm Econ. 34(5): 922-929. Dec. 1952.

Summarizes data to 1951 on distribution margins for various dairy products and also the costs per quart for distributing milk to consumers through stores in 24 cities. Methods of lowering unit costs of operation are also discussed.

Bressler, R. G., Jr., and Clarke, D. A., Jr.

RESALE MILK PRICE CONTROL--OUTMODED AND ANTI-SOCIAL?

Jour. Farm Econ. 37(2): 280-291. May 1955.

Shows comparisons of price spreads between producer and consumer in controlled and noncontrolled markets. In January 1955, 12 States had retail price control of fluid milk. Two tables compare retail, wholesale, and store margins in 33 markets in these States, and 67 markets in other States without Government control.

Cook, Hugh L.

LONG DISTANCE TRANSPORTATION AND HANDLING CHARGES FOR WISCONSIN MILK.

Testimony at Federal Order 27 Hearing, Syracuse, New York. Jan. 1959.

Professor Cook from the University of Wisconsin presented data on long distance transportation and plant handling charges for U.S. Public Health Service inspected fluid milk on behalf of the Eastern Milk Producers Cooperative. Data were obtained from 5 of the largest milk trucking firms. Only shipments over 600 miles were recorded in 1958.

Gray, Leo R., MacPherson, Donavon D., and Phillips, Victor B.

PRICES AND PRICE SPREADS FOR BEEF, EGGS, AND FLUID MILK IN SELECTED MARKETS OF THE UNITED STATES AND EUROPE.

U.S. Econ. Res. Serv., ERS-37. 20 pp. Dec. 1961.

Comparison of farm-to-retail price spreads and retail prices on the basis of dollar amounts and of equivalent labor-time requirements, 1955-56.

Grocery Manufacturers of America, Inc.

EVAPORATED MILK--A STUDY OF THE SPREAD BETWEEN THE PRICE OF RAW FARM PRODUCTS AND THE PRICE PAID AT THE STORE BY THE CONSUMER.

205 E. 42nd St., New York, N. Y. (Reprinted from The National Grange Monthly) 6 pp. Sept. 1953.

Gives estimates of the farmer's share, manufacturer's margin, and supermarket's margin in terms of the 1952 retail price for a 14½-ounce "tall" can of nationally advertised evaporated milk. Manufacturing and store handling costs are broken down and explained as a proportion of the retail price.

Henderson, Peter L.

A STUDY OF THE VARIATION IN COST OF HANDLING MILK FROM PRODUCER TO CONSUMER BY SIZE OF COOPERATIVE ASSOCIATION IN GEORGIA.

Univ. of Ga., M.S. Thesis. 1948.

Howe, C. B.

MARKETING MARGINS AND COSTS FOR DAIRY PRODUCTS.

U.S. Bur. Agr. Econ. Tech. Bul. 936. 82 pp. Nov. 1946.

Marketing margins and costs, and marketing channels, for fluid milk, butter, American cheese, and evaporated milk, mostly for 1939.

Johnson, A. C. and Metzger, H. B.

COSTS AND MARGINS IN HANDLING EXCESS MILK IN FLUID MILK PLANTS.

Maine Agr. Expt. Sta. Bul. 569. 29 pp. Dec. 1957.

To show costs and margins associated with handling excess milk in fluid milk plants, to provide a basis for judging impact of various pricing procedures on dealers' returns in handling excess milk.

Kelly, Ernest and Clement, Clarence E.

MARKET MILK.

John Wiley & Sons, Inc., London. 445 pp. 1923.

A textbook covering both the theory and practice of the varied phases of the market milk industry, containing the results of much original investigations and experience, as well as the best thoughts of others.

Klein, Jack E.

MARKETING MILK IN ALASKA.

U.S. Dept. Agric. Mktg. Res. Rpt. 385. 29 pp. March 1960.

Analyzes Alaskan milk marketing practices, sources of supply, prices, and types of milk distributed.

Kutish, J. and Miller, A.

TRUCK TRANSPORTATION IN THE MARKETING OF WISCONSIN MILK AND FLUID DAIRY PRODUCTS.

Univ. Wis. Agr. Col. Ext. Serv. Econ. Inform. Wis. Farmers 21(4-6): 1-6. April-June 1950.

Reviews hauling costs from farms to plants, between plants in the State, and from Wisconsin plants to out-of-State markets in 1949. Assesses the effect of size of payload on these costs.

Lister, John H.

ANALYSIS OF THE RETAIL PRICE OF A QUART OF MILK SOLD IN WASHINGTON.

U.S. Dept. Agric. Preliminary Rpt. Feb. 1924.

Analyzed the retail price of a quart of bottled milk into the portions received by each of the agencies. Data were obtained from the principal distributors, the Maryland-Virginia Milk Producers Association and the District Health Department for the months from June-December 1923.

MacLeod, Howard

APPRAISAL OF DAIRY PLANT OPERATION IN SOUTHEASTERN NORTH DAKOTA.

N. Dak., M.S. Thesis. 1960.

MacPherson, D. D. and Smith, H. V.

MARKETING COSTS AND MARGINS FOR DAIRY PRODUCTS.

U.S. Agr. Mktg. Serv., Marketing and Transportation Situation, MTS-124: 30-37. Jan. 30, 1957.

Analyzes changes in margins for fluid milk, butter, cheese, and evaporated milk generally from 1950 to 1956. Compares these changes in margins with estimated changes in operating costs. Discusses effects of quantity discounts, variations in container size, and price spreads on manufactured dairy products in various sections of the country.

MacPherson, D. D. and Smith, Helen V.

MARKETING MARGINS FOR DAIRY PRODUCTS.

Reprinted from the Marketing and Transportation Situation, U.S. Dept. Agric., AMS-297. 1960.

Discussion of margins for fluid milk and manufactured dairy products.

Manning, Travis W.

AN ANALYSIS OF THE ECONOMIC EFFICIENCY OF MINNESOTA DAIRY COOPERATIVES.

Univ. of Minn., Ph. D. Thesis. 1954.

New York (State) Council of Farms and Markets.

Preliminary report...of its investigation of the cost of production and distribution of milk in New York State. Albany, Legislative Doc. No. 194. 29 pp. 1919.

Reports on changes of costs brought about by the war situation.

Olson, R. E. and Smith, H. V.

MARKETING MARGINS AND COSTS FOR DAIRY PRODUCTS.

The Mktg. and Transportation Situation, U.S. Agr. Mktg. Serv., MTS-116: 10-17. Jan. 31, 1955.

Olson, R. E.

MARKETING MARGINS FOR DAIRY PRODUCTS.

The Mktg. and Transportation Situation, U.S. Agr. Mktg. Serv., MTS-120: 11-20. Jan. 25, 1956.

Padgett, Jerry H.

MORE EFFICIENT TRANSPORTATION PATTERNS AND MARKETING METHODS FOR INDIANA DAIRY PRODUCTS.

Purdue Univ., Ph. D. Thesis. Jan. 1960.

Pritchard, N. T.

CHANGES IN MARKETING MARGINS AND COSTS FOR DAIRY PRODUCTS, 1950-53.

The Mktg. and Transportation Situation, U.S. Agr. Mktg. Serv. MTS-112: 18-26. Feb. 17, 1954.

Simmons, Richard L.

THE ECONOMIC FEASIBILITY OF ADDITIONAL MILK MANUFACTURING FACILITIES IN NORTH CAROLINA.

North Carolina State College A.E. Info. Series 99. 45 pp. Feb. 1963.

Study investigates the economic feasibility of constructing and operating manufacturing facilities to handle current and prospective supplies of surplus milk. Plants considered are (1) specialized cheddar cheese plant and (2) butter-powder plant. Analysis indicated that only the latter appears promising at present.

Staff of the Legislative Council

REPORT OF THE SPECIAL JOINT COMMITTEE ON DAIRY PRICE SPREADS TO THE 1955 LEGISLATURE.

State Capitol, Madison, Wis. pp. 2072-2142. June 1955.

Gives details on dairy margins, prices, and costs, with special attention to the Wisconsin farmer's share of the consumer's fluid milk dollar and an explanation of why fluid milk margins behave as they do.

Stein, Fred, Mathis, Athony G., and Herrmann, L. F.

COSTS OF BUTTERFAT SAMPLING AND TESTING PROGRAMS.

U.S. Agr. Mktg. Serv., AMS-212. 19 pp. Oct. 1957.

Relative costs of testing programs for finding the average monthly butterfat content of producer milk shipments.

Stelly, Randall

ECONOMICS OF MILK PRODUCTS PROCESSING PLANTS IN TEXAS.

Texas Agr. Expt. Sta. Bul. 883. 12 pp. Dec. 1957.

To furnish dairy industry information essential in establishing economically located and efficiently operated dairy products processing plants in Texas.

U.S. Agricultural Marketing Service

MARKETING COSTS AND MARGINS FOR FRESH MILK.

U.S. Dept. Agric. Misc. Publ. 733. 16 pp. Feb. 1959.

Describes briefly the marketing of fluid milk, the distribution of the consumer's milk dollar by major functions and by marketing costs, trends since World War II in retail price, farm value and marketing margin, labor

costs and profits, and ways marketing costs have been reduced. Estimates of U.S. averages are based on statistics reported in other studies.

Vial, E. E.

MARGIN BETWEEN NEW YORK CITY FLUID CREAM AND NONFAT DRY MILK SOLIDS PRICES AND THE PRODUCER PRICE OF MILK.

Milk Dealers' Asso. of Metropolitan New York, Membership Ltr. 82.
12 pp. July 20, 1954.

Calculated margins, 1939-1954.

Young, E. C. and Bergfeld, A. J.

METHODS EMPLOYED IN AN ANALYSIS OF THE SPREAD BETWEEN FARM AND CONSUMER MILK PRICES IN NEW YORK CITY.

Jour. Farm Econ. p. 1194. Nov. 1949.

Report on methodology used in N. Y. State Temporary Commission on Agriculture report. Study of nine functions from farm to consumer--detailed study time and cost studies of six functions--average costs for most others. Got unit costs, explanation of differences in costs among those performing the function.

MANUFACTURED DAIRY PRODUCTS

General

Bakken, H. H.

THE COST OF MANUFACTURING AND MARKETING EVAPORATED MILK.

Rio, Wis., Rio J. 23 pp. 1938.

Costs cover maintenance, depreciation, taxes, rent interest, insurance transportation, labor, power, canning materials, and supplies. A large volume of milk delivered from as many as 400 to 800 farms in Wisconsin must be brought into one plant to keep down overhead costs and maintain maximum efficiency. The value added by manufacture as measured by the difference between the unit cost of raw material and the price of the finished product is greater than it is for either butter or cheese. Where plants are located in seasonal milk production areas, considerable operating capital is required to carry accumulated inventory stocks.

Boles, James N.

ECONOMIES OF SCALE FOR EVAPORATED MILK PLANTS IN CALIFORNIA.

Univ. of Calif. Ph. D. Thesis. 1955.

Boston Class II Milk Price Committee

PRICING CLASS II MILK IN THE BOSTON MARKET.

230 Congress St., Boston, Mass. 158 pp. Feb. 1951.

Defines Class II milk and the objectives of pricing, the relationship of Boston prices to those in other markets, margins in Boston, and gives foundation for determination of costs and profits or losses. Also, discusses income and expense at manufacturing plants, margins on sales of bulk milk and the costs of buildings, equipment, fuel repairs, etc. Tables cover various functional costs between 1930 and 1950.

Cooperative Auditing Service

SUMMARY OF COMPARATIVE COSTS OF OPERATION--PERIODS ENDING MAY 1, 1955 TO APRIL 30, 1956--COOPERATIVE CREAMERIES, CHEESE FACTORIES AND LOCKER PLANTS.

739 Johnson St., N.E., Minneapolis, Minn. 60 pp. 1956.

The 25th issue of the annual report, giving trends in overall operating costs and providing a basis of comparison in the operation of 166 cooperative dairy plants in the Midwest. Compares manufacturing costs by districts, and includes a summary of manufacturing costs per pound of butterfat.

Frazer, J. R., Nielsen, V. H., and Ladd, G. W.

MANUFACTURING: WHOLE MILK CREAMERIES.

Iowa State College, Agr. Expt. Sta. Spec. Rpt. 17. Dec. 1956.

Analysis of relationship between costs of manufacturing butter from whole milk and volume of production.

Hassler, James B.

PRICING EFFICIENCY IN THE MANUFACTURED DAIRY PRODUCTS INDUSTRY.

Hilgardia Vol. 22, No. 8. pp. 235-334. Aug. 1953.

Investigation is concerned with prices of dairy products at the producer plant and wholesale level. Respective price relationships are the core of the study.

Herrmann, Louis F., Agnew, Donald B., and Clarke, D. A., Jr.

CLASS III MILK IN THE NEW YORK MILKSHED. V. PROCESSORS' DECISIONS ON UTILIZATION.

U.S. Agr. Mktg. Serv. Mktg. Res. Rpt. 462. 28 pp. March 1961.

Report points out (1) factors which affect the market for Class III products and (2) handlers decisions about the disposition of Class III milk.

Homme, Henry A.

ESTIMATION AND USE OF COST FUNCTIONS IN IOWA CREAMERIES.

Jour. Farm Econ. XXXV: 5. pp. 931-937. Dec. 1953.

A modified engineering approach.

Johnson, Aaron C., Jr., Förker, Olan D., and Clarke, D. A., Jr.

OPERATIONS AND COSTS OF MANUFACTURING DAIRY PRODUCTS IN CALIFORNIA.

Calif. Agr. Expt. Sta. Giannini Found. Res. Rpt. 272. 72 pp.

Jan. 1964.

Part I presents description of the manufactured dairy products industry. Part II covers the development of an analysis of the processing costs involved in the manufacture of selected dairy products.

Jones, W. Webster

COTTAGE CHEESE AND FROZEN DESSERTS. COST OF PRODUCTION IN DIVERSIFIED MILK PLANTS IN KANSAS, MISSOURI, AND OKLAHOMA.

U.S. Econ. Res. Serv. Mktg. Res. Rpt. 620. 15 pp. July 1963.

Average cost of processing and marketing cottage cheese was 19.7 cents per pound in 7 plants, and for 5 of these plants, costs for processing and marketing frozen desserts was \$1.15 per gallon. Most of variation of costs was due to differences in costs for ingredients selling and delivering.

Kelly, Paul L.

POLICIES FOR MARKETING SURPLUS MILK. PART I. STRUCTURE AND ORGANIZATION OF SURPLUS MILK MARKETS IN WICHITA AND SOUTHWEST KANSAS.

Kansas Agr. Expt. Sta. Agr. Econ. Rpt. 98. Oct. 1961.

Structure and organization of surplus milk markets in the Wichita and S. W. Federal Order areas were studied. A model of a large scale multi-unit product surplus plant then was synthesized in order to estimate costs and returns of handling different volumes of surplus milk.

Knudston, A. C. and Koller, E. F.

MANUFACTURING COSTS IN MINNESOTA CREAMERIES.

Minn. Agr. Expt. Sta. Bul. 442. 36 pp. June 1957.

Lacasse, Armand, and Spencer, Leland

COSTS AND EFFICIENCY IN THE OPERATION OF MILK MANUFACTURING PLANTS IN THE NEW YORK-NEW JERSEY MILKSHED.

Cornell Univ. Agr. Expt. Sta. A. E. Res. 86. 43 pp. Nov. 1960.

Purpose of study to develop information that could contribute toward more efficient operation of manufacturing plants in the New York-New Jersey Milkshed. Special attention given to costs of converting milk into cream and nonfat dry milk, also to effect of plant size and seasonality of supply on operating costs.

Manning, T. W., Koller, E. F., and Jesness, O. B.

MINNESOTA DAIRY COOPERATIVES.

Minn. Agr. Expt. Sta. Bul. 420. 44 pp. June 1953.

Considers some of the special problems encountered by dairy cooperatives. Gives special attention to factors affecting operational and financial success or failure. Also treats operating expenses and net margins for 534 associations. Based on survey conducted in 1950.

Manning, T. W., Felberg, R., and Kristjanson, R. L.

MILK OR CREAM--WHICH IS MORE PROFITABLE FOR SOUTH DAKOTA FARMERS AND CREAMERIES?

S. Dak. Agr. Expt. Sta. Bul. 460. 27 pp. Feb. 1957.

A detailed cost analysis of 5 cooperative creameries in South Dakota to determine the profitability of shifting from farm separated cream to a whole milk operation. Operating costs for butter made from cream are compared with those incurred through conversion to whole milk, and comparative costs and returns to farmers and creameries are described for cream and milk.

McAllister, C. E. and Clarke, D. A., Jr.

CLASS III MILK IN THE NEW YORK MILKSHED. IV. PROCESSING MARGINS FOR MANUFACTURED DAIRY PRODUCTS.

U.S. Agr. Mktg. Serv. Mktg. Res. Rpt. 419. 102 pp. Aug. 1960.

Report shows "partial" net margins of processors of milk and dairy products in the New York-New Jersey milkshed. Factors in the analysis included yields of products from whole milk, prices of products, cost of raw product, and cost of processing. Margins are calculated for period 1948-57.

Milk Dealers' Association of Metropolitan New York, Inc.

STUDY OF COSTS OF MANUFACTURING CREAM AND SKIM MILK POWDER AT NEW YORK POOL PLANTS, 1947-50.

Hotel Roosevelt, Madison Avenue at 45th St., New York, N. Y. 11 pp. Sept. 1953.

Shows operating costs of seven manufacturing plants in the New York pool in 1950. Analyzes and discusses costs involved in the separation of cream and the handling of skim milk. Explains costs of manufacturing, plant loss, operation of feeder plants and transportation of feeder milk. Costs in 1952 and 1953 are also related to earlier years.

Milk Dealers' Association of Metropolitan New York, Inc.
MARGIN BETWEEN BUTTER AND NONFAT DRY MILK SOLIDS PRICES AND THE ORDER PRICE OF MILK FOR BUTTER.

Membership Letter No. 83, New York, N. Y. 13 pp. Aug. 1954.

Discusses the change observed in the importance of the margin between the wholesale market prices of butter and nonfat solids and the order price of milk utilized for butter.

MILK PRODUCTS--COSTS, PRICES, AND PROFITS OF WAR FOOD PURCHASES.

U.S. Dept. of Agric., Prod. and Mktg. Adm., Compl. and Investig. Br.
72 pp. Sept. 1946.

Data on costs and profits were collected to facilitate investigations of food purchases during World War II.

Nelson, G. T.

DECIDING WHETHER TO MANUFACTURE BUTTER AND POWDER...OR CHEESE.

Oreg. Agr. Expt. Sta. Bul. 546. 9 pp. Nov. 1954.

To aid management in making economic decisions through consideration of the capital costs involved when planning to build a new plant or remodel the old. Gives price combinations at which it is equally profitable to manufacture cheese or butter and spray-process powder, together with the returns from cheese vs. butter-powder for 1947-53 received by 28 dairy plants in Oregon, Idaho, and Washington.

Owens, T. R. and Clarke, D. A., Jr.

CLASS III MILK IN THE NEW YORK MILKSHED: III. COSTS OF MANUFACTURING DAIRY PRODUCTS.

U.S. Agr. Mktg. Serv. Mktg. Res. Rpt. 400. 57 pp. May 1960.

Estimates of costs of processing major types of dairy products which utilize Class III milk. Purpose is: (1) to analyze net margins, and (2) to provide basis for decision making.

Page, Clayton M. and Walker, Scott A.

BUILDING DESIGNS FOR DAIRY PROCESSING PLANTS.

Idaho Agr. Expt. Sta. Bul. 297. 27 pp. June 1953.

A summary of the principles of site selection, building flexibility, structural systems and materials, and special construction and material use problems; descriptions for floor plans and estimated building costs for 4 model butter-powder plants; descriptions of physical and maintenance characteristics for use in rating different constructions.

Riddell, F. T. and Horner, J. T.

THE MARKETING OF MICHIGAN MILK THROUGH CREAMERIES, CREAM STATIONS, CONDENSERIES AND CHEESE FACTORIES.

Mich. AES Spec. Bul. 189. 36 pp. Feb. 1929.

Assembly, by size of plant, costs, supplies and prices.

Schultz, Stanley R.

AN ECONOMIC ANALYSIS OF MANUFACTURING MILK PRODUCTION IN OHIO.

Ohio State Univ., Ph. D. thesis. 1960

Townsend, T. W.

LABOR INPUT REQUIREMENTS AND EFFICIENCY OF A MULTI-PRODUCT DAIRY PROCESSING PLANT AS DETERMINED BY RATIO-DELAY ANALYSIS.

Kansas State Univ., M.S. Thesis. 1959.

BUTTER

Albrecht, Oscar

RESOURCE PRODUCTIVITY IN KANSAS-NEBRASKA BUTTER PLANTS.

Kansas State Univ., M.S. Thesis. 1958.

Frazer, J. R., Nielsen, V. H., and Nord, J. D.

THE COST OF MANUFACTURING BUTTER.

Iowa Agr. Expt. Sta. Bul. 389. pp. 783-860. June 1952.

Based on 1950 data from 13 Iowa creameries. Discusses costs of manufacturing creamery butter from farm-separated cream.

Harris, Edmond S.

MARKETING MARGINS FOR BUTTER.

U.S. Agr. Mktg. Serv. Mktg. Res. Rpt. 289. 42 pp. Nov. 1958.

Extensive changes took place in the marketing of butter over the years. To understand these changes, 10 actual shipments of butter were studied in detail. Statistics on margins are presented.

Hibbard, B. H. and Hobson, Asher

THE MARKETING OF WISCONSIN BUTTER.

Wis. Agr. Expt. Sta. Bul. 270, USDA coop. 69 pp. June 1916.

Costs and margins for butter in 1914. Pricing.

Jones, W. Webster

BUTTER AND NONFAT DRY MILK PRODUCTION IN DIVERSIFIED PLANTS IN KANSAS, MISSOURI, AND OKLAHOMA.

U.S. Dept. of Agric. Mktg. Res. Rpt. 430. 51 pp. Sept. 1960.

Analyzes methods and costs of producing butter and nonfat dry milk and procurement, processing, and distribution practices and costs.

Knudson, Arvid C. and Koller, E. Fred
PROCESSING COSTS OF WHOLE MILK CREAMERIES.

Minn. Agr. Expt. Sta. Tech. Bul. 236. 51 pp. June 1960.

To study cost information useful in reorganizing plants in the creamery industry on more efficient basis.

Manning, T. W., Felberg, R., and Kristjanson, R. L.
MILK OR CREAM--WHICH IS MORE PROFITABLE FOR SOUTH DAKOTA FARMERS AND CREAMERIES?

S. Dak. St. Col., AES Bul. 460. 27 pp. Feb. 1957.

A detailed cost analysis of 5 cooperative creameries in South Dakota to determine the profitability of shifting from farm separated cream to a whole milk operation. Operating costs for butter made from cream are compared with those incurred through conversion to whole milk, and comparative costs and returns to farmers and creameries are described for cream and milk.

March, Robert W., Anderson, Elsie D., and Klein, Jack E.
ANALYSIS OF SHORT-TIME CHANGES IN THE PRICE OF BUTTER AT CHICAGO.

USDA, Agr. Mktg. Serv. Mktg. Res. Rpt. 194. 67 pp. Aug. 1957.

Analyzes fluctuations in butter prices and how price equates supply with demand, also how the butter marketing system operates. Margins were found to be related to price fluctuations.

Thomsen, L. C. and Forker, R. K.
PACKAGING OF BUTTER FOR RETAIL SALES.

Wis. Agr. Expt. Sta. Bul. 481. 16 pp. Nov. 1948.

Details costs involved in packaging butter by firms packaging 5,000, 50,000 and 100,000 pounds per week in 1947. Discusses labor, equipment and overhead costs, as well as the margins for packaged butter over bulk sales. Cost figures based on information supplied by 30 creameries and butter distributors in Wisconsin, Minnesota, and Illinois.

Walker, S. A., Preston, H. J. and Nelson, G. T.
AN ECONOMIC ANALYSIS OF BUTTER-NONFAT DRY MILK PLANTS.

Idaho Agr. Expt. Sta. Res. Bul. 20. 90 pp. June 1953.

Develops 5 model roller-process and 7 model spray-process butter-powder plants from data collected from a like number of real plants for 1948-49. Uses model plants to analyze relationship between costs and scale of operations and to study efficiency in the utilization of labor, equipment, and other resources. Based on detailed processing costs obtained for each of 17 functions in four broad categories: Overhead, joint operating, butter manufacturing, and powder manufacturing.

NONFAT DRY MILK

Butz, D. E. and Koller, E. F.

COSTS OF DRYING MILK IN MINNESOTA PLANTS.

Minn. Agr. Expt. Sta. Bul. 413. 30 pp. May 1952.

Presents a general picture of the Minnesota dry milk industry, with particular emphasis on costs involved in assembling milk supplies and processing dry milk in 1947-50. Includes suggestions for reducing milk assembly and manufacturing costs.

Frazer, J. R., Nielsen, V. H., and Ladd, G. W.

SPRAY DRYING COSTS IN LOW VOLUME MILK PLANTS.

Iowa Sta. Spec. Rpt. 19. Sept. 1957.

Report on costs under conditions of small volume.

Juers, L. E. and Koller, E. F.

COSTS OF DRYING MILK...IN SPECIALIZED DRYING PLANTS.

Minn. Agr. Expt. Sta. Bul. 435. 24 pp. June 1956.

Reports on changes in the cost of manufacturing dry milk since World War II in 18 large specialized drying plants in Minnesota. Analyzes manufacturing and packaging costs and the effect of seasonal production on costs.

Kolmer, L., Homme, H. A., and Ladd, G. W.

SPRAY DRYING COSTS IN LOW-VOLUME MILK PLANTS.

Iowa Spec. Rpt. 19. 12 pp. Sept. 1957.

Costs by economic-engineering methods for 3 model plants processing up to 750 pounds per hour.

Miller, Arthur H.

MARKETING OF NONFAT DRY MILK SOLIDS BY WISCONSIN PLANTS.

Wis. Agr. Expt. Sta. Res. Bul. 175. 32 pp. April 1951.

To determine the method and mechanism by which Wisconsin milk plants sell and determine the price of nonfat dry milk solids.

Purcell, Margaret R.

NONFAT DRY MILK PACKAGED FOR HOUSEHOLD USE.

U.S. Agr. Mktg. Serv. Mktg. Res. Rpt. 403. 49 pp. June 1960.

In December 1958, farmers received 15 cents for every dollar consumers spent for instant nonfat dry milk. Processors received 14 cents, the share going for instantifying, packaging and distribution to wholesalers was 48 cents. Wholesalers received 5 cents and retailers 18 cents of every dollar.

U. S. Agricultural Marketing Service
MARKETING MARGINS FOR EVAPORATED MILK.

U.S. Agr. Mktg. Serv., Marketing and Transportation Situation 104: 9-11. Feb. 29, 1952.

Presents annual data on evaporated milk price spreads for 1920 to 1951, showing the division of the total margin between manufacturers and other marketing agencies.

ICE CREAM

Babb, Emerson M. and Taylor, James C.

USE OF ECONOMIC-ENGINEERING TECHNIQUES IN PLANNING ICE CREAM OPERATIONS.

Cooperative Extension Service, Purdue Univ. Mimeo EC-240. 18 pp.
June 1962.

Provides those responsible for decision-making with useful techniques for planning more efficient operations.

Hankinson, D. J.

ANALYZING PRODUCTION COSTS.

Ice Cream Review 35: 104-107. Aug. 1951.

Defines ice cream production costs and presents a method for calculating the ingredient cost per gallon. Includes a 1948 chart for determining flavor cost and cost of finished ice cream.

International Association of Ice Cream Manufacturers

TRENDS IN COSTS--ICE CREAM AND RELATED PRODUCTS--1955.

Spec. Bul. 97. 29 pp. Nov. 1956.

The latest publication of a series on trends in ice cream costs. Includes an analysis and comparison, on a district basis of the product and ingredient costs per gallon. Operating expenses are compared for the years 1952-55, and weighted average costs per gallon are shown from 1936 through 1955.

Moore, Hugh L. and Taylor, J. C.

THE EFFECT OF SIZE OF OPERATION ON COST OF ICE CREAM MANUFACTURING.

Ice Cream Field. pp. 25-31. Aug. 1963.

Profit margins for ice cream manufacturers have been small. An important area for improving profits has been reducing labor and equipment costs. Analysis showed that per unit plant labor and equipment costs could be reduced by as much as 60 percent when volume increased from 100,000 to 500,000 gallons annually. This was generally observed.

Nugent, R. J.

ICE CREAM DELIVERY COST.

Ice Cream Review 35: 49, 78-80. Dec. 1951.

Methods are suggested for improving efficiency and decreasing costs of delivery for ice cream. Cost data are based on a hypothetical situation, but costs are estimated for wages and labor, trucks, and cabinets.

Owen, M. F.

CONTROLLING CABINET COSTS.

Ice Cream Field 63(5): 54-58. Nov. 1951.

Tables show maintenance costs per gallon for 1946-51. Analyzes costs of cabinet equipment display cabinet maintenance, and costs per gallon, also shows a table of original and depreciated value of used cabinets and compressors.

Smith, R. T.

COSTS OF ICE CREAM DISTRIBUTION.

Ice Cream Trade Journal 46(6): 40-41, 105. June 1950.

A survey of ice cream manufacturers in the Pennsylvania-New Jersey-Delaware area. Costs in 1949 are compared with those of 1946 for delivery truck bodies, small dealers served, products delivered, and cabinet service.

Weber, I., et al

COST PER GALLON.

Ice Cream Field 60(6): 22, 24, 27, 70-71. Dec. 1952.

Tabulates and analyzes actual cost figures which are representative of Iowa ice cream manufacturers for 1948 and 1951. A panel of four representatives from the midwestern ice cream industry discuss delivery and selling costs in detail.

CONCENTRATED MILK

Bartlett, R. W.

CONCENTRATED MILK: ACTUAL AND POTENTIAL SALES.

Paper given at Farm and Home Week, Jan. 31, 1956. Univ. Ill. Dept. Agr. Econ. 5 pp. plus 3 tables. Jan. 1956.

Discussion of interstate sale of concentrated milk, and exploration of possibility of reducing distributor handling margins, with emphasis on current low distribution costs in Washington, D. C. Tables show for various selected years, costs of distributing milk to consumers through stores in 24 cities, costs for transporting concentrated milk from Chicago to specific markets, and prices paid by consumers for whole and evaporated milk.

Mathis, A. G.

THE PROBABLE IMPACT OF MILK CONCENTRATES ON THE FLUID MILK MARKET.

U.S. Agr. Mktg. Serv. Mktg. Res. Rpt. 208. 24 pp. Feb. 1958.

Market tests with refrigerated concentrated milk indicates that, given adequate product quality, acceptance of new concentrated milk products depends largely on the price advantage. Evidence does not indicate that concentrated milk will displace a major part of fresh milk. Costs and prices are discussed.

Riekens, James A. and Thomsen, L. C.

COSTS OF PROCESSING, TRANSPORTING AND DISTRIBUTING FRESH OR STERILE CONCENTRATED MILK.

Wis. Agr. Expt. Sta. Res. Bul. 204. 27 pp. March 1958.

Data presented to show that fresh or sterile concentrated milk could be competitively merchandized in areas which are remote from the production point.

Spencer, L. and Scott, R.

COSTS, MARGINS, AND PRODUCER PRICES IN CONCENTRATED MILK.

Amer. Milk Rev. 13(6): 14-16. June 1951.

Treats estimated production costs and savings in handling charges. Reports experience with concentrated milk in various parts of the country since November 1950.

U. S. Agricultural Marketing Service

THE OUTLOOK FOR FROZEN CONCENTRATED MILK.

The Mktg. and Transportation Situation, U.S. Agr. Mktg. Serv., MTS-123: 27-29. Oct. 1956.

Compares costs of frozen concentrate with fresh fluid milk under present shipping, packaging, and distribution methods. Presents a brief description of the trial use of frozen concentrated milk by the Army and Navy and discusses its possible acceptance as a retail product.

Utter, K. L., et al

METHODS AND COSTS OF PROCESSING AND DELIVERING FRESH CONCENTRATED MILK IN RURAL AREAS.

Iowa Agr. Expt. Sta. Spec. Rpt. 14. 16 pp. Nov. 1955.

Discusses processing difficulties and gives an insight into consumer reaction to fresh concentrate rural areas of Iowa and Illinois in 1951. Gives estimates of various costs of handling fresh concentrated milk.

Ward, E. H. and Cook, H. L.

CONCENTRATED MILK: SOME ASPECTS OF COSTS AND ACCEPTANCE FOR RETAIL DISTRIBUTION.

Univ. Wis., Dept. Agr. Econ., Agr. Econ. 12. 40 pp. Sept. 1954.

The largest part of this report deals with the many costs of handling concentrated milk in 1951. Reports or estimates costs of raw milk, processing, containers, and distribution in various cities, together with cost of whole milk for the concentrating operation. Gives 107 references to other literature concerning concentrated milk.

CREAM

Erwin, C. C. and Harrington, D. N.

MARKETING CREAM IN MISSOURI THROUGH COOPERATIVE BUYING STATIONS.

Mo. Agr. Expt. Sta. Res. Bul. 539. 35 pp. Dec. 1953.

Analyzes cooperative system of buying cream in Missouri through 50 local buying stations, with a special section on the marketing margins and costs of handling cream in this fashion during 1947-50.

Jensen, C.

COST OF GETTING CREAM FROM THE FARM.

N. Dak. Agr. Expt. Sta. Bimonthly Bul. 15: 83-84. Nov.-Dec. 1952.

Gives cost to 11 North Dakota creameries of getting cream from the farms to the plant by various methods (except for direct producer delivery).

Milk Dealers' Association of Metropolitan New York, Inc.

STUDY OF COSTS OF MANUFACTURING CREAM AND SKIM MILK POWDER AT NEW YORK POOL PLANTS, 1947-50.

Hotel Roosevelt, Madison Avenue at 45th St., New York, N. Y. 11 pp. Sept. 1953.

Shows operating costs of seven manufacturing plants in the metropolitan New York pool in 1950. Analyzes and discusses costs involved in the separation of cream and the handling of skim milk. Explains costs of manufacturing, plant loss, operation of feeder plants and transportation of feeder milk. Costs in 1952 and 1953 are also related to earlier years.

Taylor, Paul N., Brinegar, George K., and Johnson, Stewart
THE RETAIL MARKET FOR FLUID CREAM.

Univ. of Conn. Agr. Expt. Sta. Bul. 333. 28 pp. Sept. 1957.

Description of post-war changes in size and character of market for fluid cream in Connecticut. Analysis of factors affecting sales, especially price promotions and distribution arrangements.

CHEESE

Cook, Hugh L. and Schaller, LaVerne

COSTS FOR MANUFACTURING AMERICAN CHEESE IN WISCONSIN FACTORIES OF TWO-VAT SIZE, 1950.

Preliminary, Univ. of Wis. Dept. Agr. Econ. 16 pp. May 1951.

This is a progress report. Research has two objectives: (1) to assist cheese factories in improving cost records, (2) to provide basis for further studies of costs, margins and plant efficiency. Costs of four plants are presented.

Cook, Hugh L. and Little, J. Kenneth

MARKETING COSTS AND MARGINS FOR SELECTED LOTS OF WISCONSIN CHEDDAR CHEESE.

Wis. Agr. Expt. Sta. and USDA Res. Bul. 210. 46 pp. May 1959.

Report on case studies of services performed and margins and costs associated with moving selected lots of American cheese from producer (in form of milk) to the consumer basket. Case study was chosen because averages of large numbers tend to obscure important factors.

Dubov, Irving and MacPherson, D. D.

FARM-TO-RETAIL PRICE SPREADS FOR CHEDDAR CHEESE IN THE SOUTH.

U.S. Dept. Agric. in coop. with Univ. of Tenn., Agr. Mktg. Serv. Mktg. Res. Rpt. 318. 23 pp.

Report deals with marketing methods and price spreads for cheddar American cheese in Southeastern United States. Eight selected lots of cheese were analyzed as to costs and merchandising methods from time milk was received until cheese was sold by retailers. Costs, farmers' share of consumer dollar, and retail prices are indicated.

Kosikowski, F. V.

COST OF MANUFACTURING CHEDDAR CHEESE IN NEW YORK STATE.

Milk Products Jour. 45(5): 38-39. May 1954.

A survey of four companies representing 15 cheese factories in the New York pool area. Shows cost per pound of cheese made in New York State in 1953. Tabulates four categories of costs: Total cost, labor, direct materials, and burden (operating, overhead and miscellaneous).

Little, J. Kenneth and Halvorson, Harlow W.

MARKETING COSTS AND MARGINS FOR PROCESSED CHEESE.

Reprint from the Marketing and Transportation Situation, U.S. Dept. Agric., Agr. Mktg. Serv., MTS-238. April 1958.

Report shows how the farm-retail price spread was distributed among the various processing and distributing agencies that participated in marketing three lots of processed cheese produced in Wisconsin in 1956. Marketing margins for individual lots differed substantially.

Rowe, G. A.

ECONOMICS OF CHEESE MANUFACTURING IN TILLAMOOK COUNTY, OREGON.

Oreg. Agr. Expt. Sta. Bul. 529. 31 pp. Dec. 1952.

Determines the relationship of unit cost to volume in cheese plants, based on a study of 16 plants in 1941-48. Shows cost rates and variable costs for five of the plants of different sizes, eliminating the variations in cost which were not related to differences in size.

Schaars, M. A.

SECURE DATA ON RETAILERS' MARGINS IN HANDLING CHEESE.

Wis. Agr. Expt. Sta. Bul. 435: 135-136. March 1936.

Margins for the different kinds of cheese are very similar, with little variation in different sections of the country. For eight out of 11 kinds of cheese, the average retail margin was approximately 27 percent. A slightly higher margin (usually 1 to 2 percent greater) was charged by stores granting credit than by those operating on a cash basis. Specialty stores such as delicatessens, usually charged higher margins than meat and grocery stores. Margins on processed cheese were about the same as those on the natural type.

Smith, Louis, Jr.

MARKETING MARGINS FOR AMERICAN CHEESE.

N. C. State College, Ph. D. Thesis. 1952.

Thomsen, L. C.

CHEESE FACTORY OPERATING COSTS.

Milk Products Jour. 41(9): 32-35, 56-58, 60-62. Sept. 1950.

Gives costs for a group of 14 Wisconsin cheese factories for 1944. Compares cost per pound of output in 1944 with cost in 10 other years during the period 1918-44. Considers manufacturing cost of various kinds of cheese. Includes 24 references to other literature relating to cheese.

